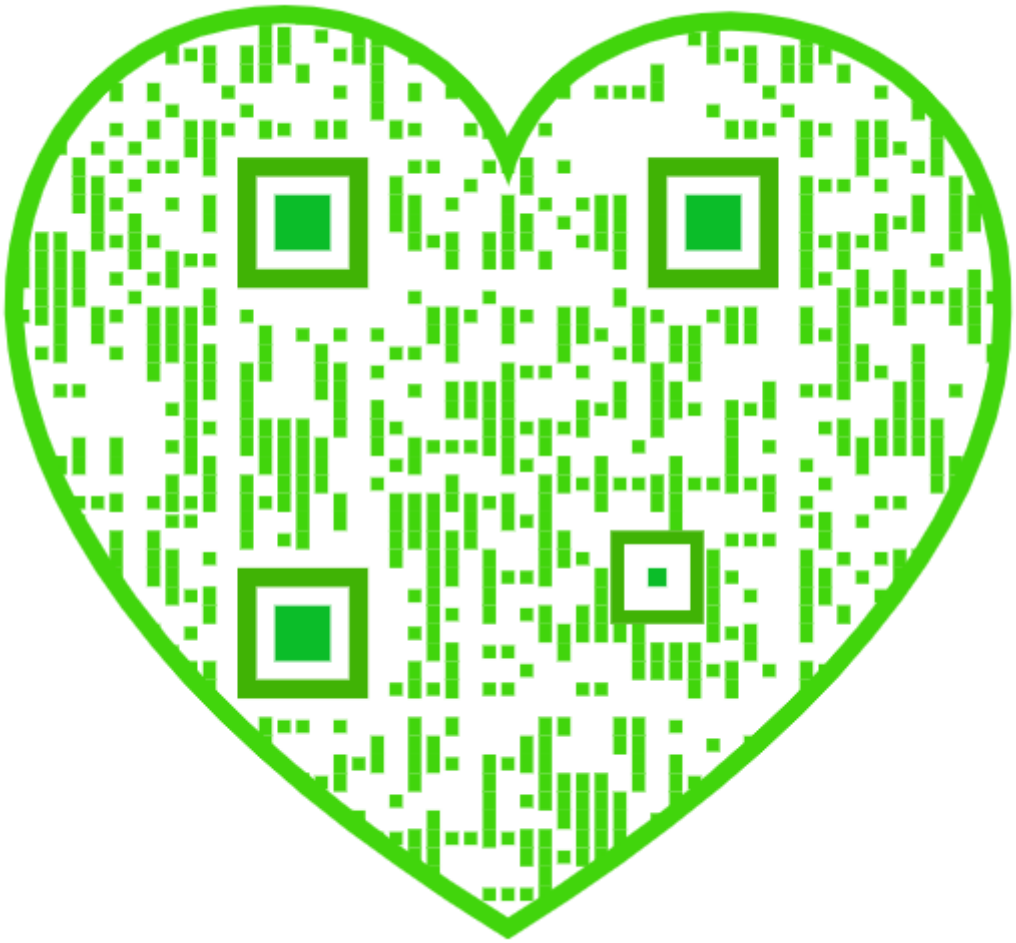

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OCTOBER
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Notes and Comments

The present situation of architects and engineers—during this presumably temporary blockade of new building activities—reminds us of a friend's (true) war-time experience. A young aviator, after disheartening delays, finally received his overseas orders, and was actually on board a transport in New York harbor—when the Armistice was declared.

He decided at least to see the celebration, so donned his new outfit (which had cost beaucoup cash): boots like long bronze mirrors, pale tan breeches that puffed out into immaculate bags, well-cut coat flaring from the Sam Browne belt, jaunty campaign cap—Solomon in all his glory. And as he stood on Broadway, looking disconsolately at the cheering, hilarious crowds, a nice old lady trotted up, patted his arm, and exclaimed, "All dressed up, and no place to go!"

* * *

When circumstances beyond one's control are the cause of enforced inactivity, it would seem that there is nothing to be done but grit one's teeth, draw in one's belt and call upon one's stock of patience. Good training for this was received during the long, lean years of recent memory. It is perhaps even harder to be patient now, after a short taste of activity and the alluring prospect of steadily increasing building needs for the cycle ahead. But patience ceases to be a virtue when one realizes that an industry (in this case, practically an infant industry) is in danger of being throttled by some of the very organizations which depend on it for livelihood.

Having lost patience (but not temper) it is time to look further into those circumstances beyond control, and attempt, if not to control them, to influence them through reason and fact. No individual, of course, can exert any such influence to any effect. Even the most potent individual in the land was forced to quote "A plague on both your houses!"

But individuals uniting in groups and organizations have a better chance to get their arguments, and their appeals to common sense, heard and considered.

This is just what is happening now, in our local problems. The producing and managing branches of the building industry are uniting to negotiate with the various trades unions in a sincere and determined effort to save the whole industry from wreckage. There is reason to hope for success. There has been a high degree of responsibility in these unions; their agreements have been scrupulously kept, for the most part; many of them are openly committed to a policy of arbitration. Fair treatment for all branches of the industry, without discrimination, is what they are really after. It should not be too difficult to convince them of the practically inevitable—and tragic—consequences which would follow either a further great increase in building costs, or a complete stoppage of building operations. Stability in costs and in the procedure of work must be assured to the building public, or it will not build.

* * *

We advise all architects, engineers and contractors to read carefully the article by Mr. A. L. Brinckman in this issue, on the 1937 edition of the Uniform Building Code. It is a thoughtful and intelligent explanation of changes in the old code, which has been in operation for about ten years and has extended its use to approximately 180 cities and counties (quoting from memory). Mr. Brinckman, the head of the Berkeley Building Department, is a thoroughly competent and reliable man. A prominent architect of the Bay district whispered to the writer, "A. L. B. is easily the best man in his line that I know." Changes affect new developments, and items that have not proved entirely satisfactory in practice. On the whole, the old code worked pretty well, was largely satisfactory to all concerned. There is no question as to the value of a code that is uniform for many communities in which an architect or engineer may find occasion to practice. Outside the large cities, it is sensible to have a code which does not require more than a fair minimum standard, except where essential points of public health and safety are concerned. Economical construction is going to be a deciding factor in much new work.

* * *

In Collier's Weekly Magazine for September 18 is an article, "Paying Plans," by Burton Ashford Bugbee, which is extremely good publicity for the architectural profession—as any whole-hearted tribute coming from the outside is bound to be. It discusses plans for the small house—"the most popular building in the country today . . . one of the most intriguing to build, for a good small house is not just a large house pared down, but a marvel of ingenuity and flexibility, combining as it does so much comfort, privacy, convenience and beauty in so little space."

And to get satisfactory results, he says, one cannot get along without an architect. "Your first great economy is a good architect. Far from being the luxury you may have imagined, he will save you his fee many times over before he is through. He is trained to devise a more workable, economical plan than either you or a builder could do, as any good builder will be the first to tell you. He will make sure you get the workmanship and materials specified. He has a passion for good construction and an eye for good design that will be money in your pocket later on in the way of low upkeep cost and easy salability. . . Consult your architect about the site before you buy. His trained eye can spot a dozen things you won't. . . A good architect can give you the most house for your money. . . Wise design can save you space, materials and labor without cutting down a jot on the comfort and pleasure your house can give you."

The whole article is full of sensible advice given in the chatty, personal manner that the great magazine public seems to love, and will go a long way towards redeeming the unfortunate effect—from the profession's point of view—produced when Collier's offered stock plans of a model home for a nominal sum.

* * *

As we present some examples of the work of Roland E. Coate in this issue, we wish to make special comment on recent recognition of his ability. At the American Institute of Architects Convention last May, he received a certificate of Fellowship in the Institute with the following citation:

"For distinguished contributions to domestic architecture, the beauty and excellence of his work, and his high professional standards."

It is rare that such a young man is awarded such an honor by the profession. As one who has followed Mr. Coate's career since he started to practice, the writer wishes to

(Please turn to Page 73)

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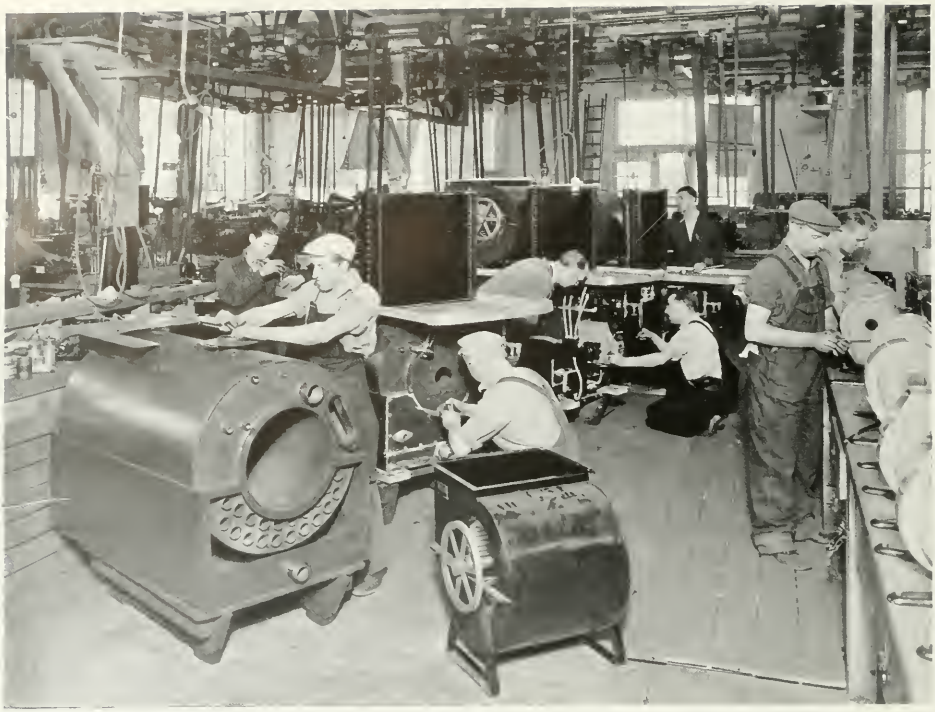

Based on more than 30 years experience in the oil heating and ventilation field, the S. T. Johnson Company of Oakland has introduced the "Selectair," a "7 in 1" heat and air-conditioning unit which has won wide acclaim by architects, engineers and home-owners throughout the country.

CALIFORNIA COMPANY SOLVES HEATING and AIR CONDITIONING PROBLEM

COMBINING in one compact unit all the features desired by home owners, architects and heating engineers for economically heating, air-conditioning and ventilating the modern home, "Selectair," a new air-conditioning unit of the S. T. Johnson Company of Oakland has won wide acceptance.

Its "7 in 1" features combine air-cleaning, humidification, automatic oil heating, blower driven conditioned air circulation, year round hot water, filtered and forced air circulation for summer and a split or dual system which permits elimination of bathrooms and kitchens from circulating system and use of steam radiators or convectors.

The value of the "Selectair," as pointed out by Johnson engineers, lies not only in its productiveness and versatility, but also in its compactness of design, economy and efficiency of operation. Occupying but little more space than the ordinary home furnace or boiler, "Selectair" conserves space in the designing of new homes and makes another room available when installed in older homes.

Heart of the "Selectair" unit is the back-heat pressure type burner. Controls are readily accessible for inspection or adjustment. As the burner stops when required temperatures are reached, the counter balanced shutter closes, prohibiting the passing of cold air through the boiler, thus materially conserving heat and lengthening the life of the boiler. In effect, the action is the same as in the old-fashioned manual job of "banking the fire."

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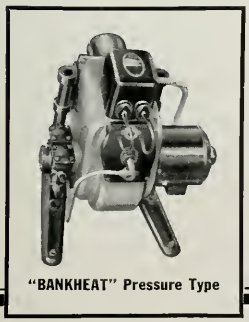
● SEND US your requirements. Johnson engineers will be glad to assist in preparation of layouts and estimates as well as plans for bricking & installation of boilers and furnaces. Advice on oil heating and power problems furnished without obligation.



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Today and Yesterday

NEVADA COUNTY
COURT HOUSE
NEVADA CITY, CAL.

Geo. C. Sellon, Architect

Upper picture—Nevada County Court House as it is now.

Right—As the building appeared before modernization.

Courtesy P. G. & E. Progress

STRUCTURAL ENGINEERS TO HOLD ANNUAL CONCLAVE AT ASILOMAR, PACIFIC GROVE

THE annual convention of the Structural Engineers Association of California will be held at Asilomar, Pacific Grove, October 15, 16 and 17. The opening session, presided over by President A. V. Saph, Jr., will be given up to convention preliminaries, appointment of convention committees, president's address and the secretary-treasurer's report.

Friday afternoon the theme will be "Relations Between the Engineer and the Public," with an introduction by President Saph. Alfred J. Cleary, Chief Administrative Officer, City of San Francisco, will speak on "The Civic Responsibilities of the Structural Engineer" and James I. Ballard will talk on "Publicising Structural Engineering."

A symposium on publicity will also be conducted by the publicity committees of the North and the South. Friday evening an illustrated lecture on "The Golden Gate International Exposition" will be given by C. M. Vanderburg, director of publicity for the Exposition.

At the Saturday morning session the "Research Program and Other Operations of the Uniform Building Code" will be discussed by D. H. Merrill, secretary of the Pacific Coast Building Officials Conference, and Charles D. Wailes, Jr., of the Portland Cement Association. There will be a golf tournament Saturday afternoon followed by a banquet and entertainment. Sunday's program will be announced at the convention.

LOS ANGELES ARCHITECT AWARDED EDWARD LANGLEY AMERICAN INS. SCHOLARSHIP

PAUL EUGENE HAYNES, with Myron Hunt and H. C. Chambers, architects of Los Angeles, was winner of one of the Edward Langley scholarships recently announced by the American Institute of Architects. There were 71 competitors for the eight awards sharing in the $4900 scholarship fund.

Mr. Haynes will study the design of large office buildings, libraries, hospitals, auditoriums, shops, and residences during three months of travel in the East. He obtained his architectural training "by the long road of office work" and recently was licensed as an architect by the California State Board.

The Langley scholarships, established by a $104,000 fund "to develop better, and not more, architects" through advanced study, research, and travel, are open to architectural draftsmen, architects, graduate students, and teachers of architecture in Canada, where Mr. Langley was born, as well as in the United States. Each scholar selects the major use to which he will put his award. No more than ten grants, with none exceeding $1,500, are made annually.

In addition to Edwin Bergstrom of Los Angeles, the committee in charge of the awards consisted of Albert J. Evers of San Francisco and William G. Nolting of Baltimore.

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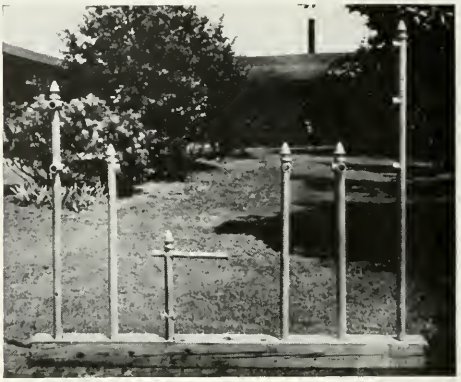

assembling. Furthermore, all threading of the pipe railing sections has been eliminated. The rails are not connected to the line posts but pass directly through them. End or corner post fastenings are made by means of small pins. The railing sections themselves are joined by means of an ingenious malleable iron dowel. This dowel, cast in accordance with the size pipe railing to be used, is driven into the pipe sections joining them tightly together. Random length pipe sections may be used, or the dowel unions staggered to suit conditions.

Until the development of this idea, iron pipe fences were constructed with an assembled post consisting of threaded pipe sections joined by means of a malleable cross-casting.

Trailer "Homes"

One wonders if the next step of the architect will be to design trailer "homes." A Michigan firm has already begun to manufacture what it terms "a revolutionary mobile house unit—a trailer cottage."

Mounted on a trailer chassis it is said to offer low-priced housing on a radically different basis than any previous attempt to solve the housing problem. It has been constructed primarily for permanent living and while the homes are a direct development of the trailer idea, they do not resemble trailers.

Two models of the new type of trailer cottage have been announced, one a 14-foot model and the other 20 feet long. Both are the same in design with the exception that the shorter model has a smaller living room. In exterior, both types resemble a miniature cottage, architecturally ugly.

AND NEW DEVICES

Sides of the mobile homes are constructed of the same kind of material used by Admiral Byrd in the Antarctic to insulate homes at Little America. Sides of the homes are in prefabricated sections, of standardized sizes, making interchangeable sections possible.

Built-in units include enamel kitchen sink, a 50-lb. capacity ice box, silver service and linen drawers and a cook-stove cabinet. The larger model has a built-in bath tub and shower bath. All water faucets and plumbing facilities are designed for connection with city water pressure systems, rather than from water tanks. There is a bed which folds up parallel to the wall. The bed is of inner spring construction and covered with upholstery fabric. Storage space in cabinets is provided above the bed. A dinette table attaches to the bed when the bed is folded up.

The trailer has been designed so that it is possible to combine two or three of the mobile homes to make up a house of five rooms. The units may be placed side by side in the form of an "H" or a "C".

New Indirect Lighting Unit

A new totally indirect lighting unit has been announced by the Westinghouse Electric and Manufacturing Company. It is smartly styled to produce a distinctive appearance which harmonizes with modern architectural interiors. Called the T. I. Aluminairo, this unit is available in two sizes; namely, TI-500 for 300 or 500 watt lamps and TI-1000 for 750 or 1000 watt lamps.

The basin of the unit is drawn from special etching grade aluminum and is brush finished. The inside reflecting surface is a matte surface to give wide angle distribution of light on the ceiling.

Hot Air

"Hot Spots" in plant and warehouse can cause as many headaches for heating engineers as metropolitan hot spots for night-clubbing metropolites. L. J. Wing Manufacturing Company, 154 West Fourteenth Street, New York, is prepared to relieve and even eliminate the former with its new "Featherweight Unit Heater" with revolving discharge designed to circulate air gently and evenly to all points—Business Week.

ARCHITECTS MOVE

William H. Harrison, formerly at 303 Architects' Building, Los Angeles, announces the removal of his offices to larger quarters in Suite 1101 in the same building.

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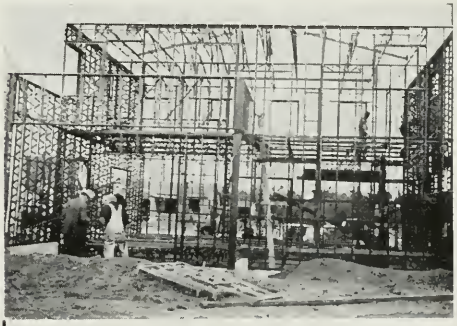

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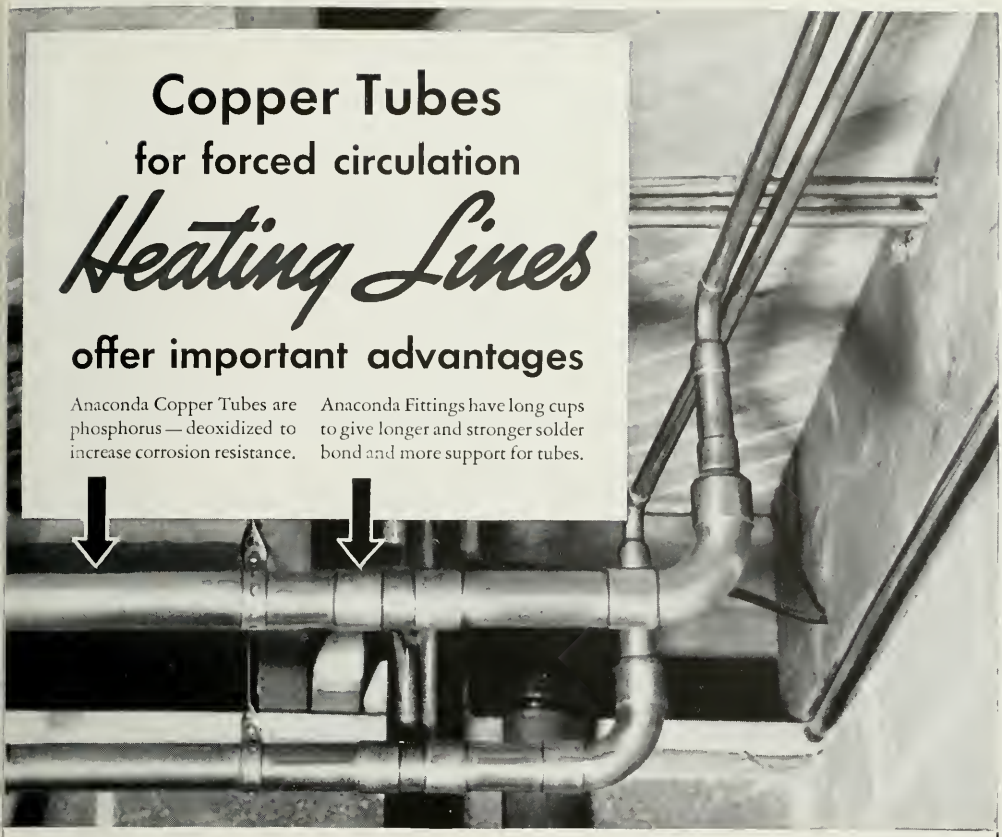
Hertzka & Knowles, Architects

COCKTAIL LOUNGE, "THE CHANCELLOR CLIPPER SHIP," CHANCELLOR HOTEL, SAN FRANCISCO
Hertzka & Knowles, Architects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Anaconda Fittings have long cups to give longer and stronger solder bond and more support for tubes.

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PULSE OF THE READER

MAGICIAN

Dear Mr. Editor:

A short time ago I was lazily thumbing through the August issue of your magazine when on page fifteen I spied the following caption in big, bold, black type: "Two Well Designed State Buildings Built Without Cost to California Taxpayers." Down came my feet from my desk and gone were my feelings of indolence. Avidly I read a second time, "Without Cost to California Taxpayers." Here was news indeed, here was something which I, a poor devil of an architect, could spring on my fellow-members of the San Diego City Council. Wouldn't they have to admit that the architectural profession was, despite the slurs cast upon it by a skeptical public, up and coming right in the forefront of the world of high finance? Of course I had for some time known Mr. McDougall as an architect of standing and a politician of no mean ability but here he appeared in an entirely new role, namely, that of a wonderful magician. Eagerly I read on and again I noted, page nineteen, "both buildings were built without cost to California taxpayers"; but alas, try as I might, nowhere in the article could I find mention of how the magician painlessly pulled the necessary funds out of the proverbial hat.

Please, Mr. Editor, don't let me down on this. Ask Mr. McDougall to publish his secret if he will, but in any case to send me the advance copy; for as chairman of our Civic Center Building Committee such information would be of inestimable value to me as we could thereby save just about $500,000 of San Diego taxpayers' money to say nothing of $400,000 on our proposed police station and city jail, plans for which have just been completed.

Many San Diegans are laboring under the pleasant illusion that because Uncle Sam played Santa Claus and gave us outright, without strings, a cool million dollars toward our Civic Center Building, we would have no part in contributing towards this fund. Somehow I cannot help but ask and wonder, as I do in the matter of the State buildings described in your journal: If the taxpayer (and that's **all of us**) doesn't pay, who, in the name of common sense, does? Yours very truly,

JOHN S. SIEBERT

San Diego, Calif.

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REDLANDS, CALIFORNIA
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STANDARDS

Dear Mr. Editor:

Recently home economists at the state colleges of Washington and Oregon completed a study of the working surface heights for the dwelling, and set up standards for height of sink and other equipment that are suited to the average homemaker. Over five hundred women were measured. The results of the study have been published as Oregon Experiment Station Bulletin 348 and as Washington Experiment Station Bulletin 345. The two bulletins are identical.

We will appreciate your cooperation in bringing these publications to the attention of your readers. The bulletin is available to citizens of Oregon and Washington free of charge, and for ten cents per copy to persons in other states. Sincerely,

MAUD WILSON
Home Economist

Oregon State Agricultural College
Corvallis, Oregon

CLAIMS PATENT

Dear Mr. Editor:

In the August, 1937 issue of "The Architect and Engineer" there appeared an article describing a concrete auditorium roof for a school building in San Mateo, Calif. A similar roof was described in the January issue of your magazine.

I think it only fair to inform your readers that a patent was applied for on this type of roof construction on February 11 1931. This patent was granted to me as U. S. Patent Number 2 059 477, which I believe fully covers the roof structures you have described.

The patent also covers certain curved arch roofs capable of spanning larger areas than the arches composed of a number of straight sections.

For example, I recently designed a concrete roof having a roof area of 170x200 feet without interior supports and without buttresses in the walls. A door opening in one side was 200 feet long.

(Turn to Page 16)

CERAMIC VENEER

was applied as the facing material for the Western Furniture Exchange by adhesion without the use of anchors or grooves in structural walls. This new method, which reduces cost of construction, has passed all of the tests and met the building requirements of the city of San Francisco. It increases the practicability of Ceramic Veneer, which has a recognized beauty and durability.

Western Furniture Exchange
San Francisco, California

Capital Company, Architect
Cahill Bros., Contractor

GLADDING, McBEAN & CO.

MANUFACTURERS OF CLAY PRODUCTS

SAN FRANCISCO PORTLAND LOS ANGELES SEATTLE SPOKANE OAKLAND VANCOUVER, B. C.

It is estimated that this particular design, using my concrete roof construction, will cost less than a structure comprising a steel frame and a wood roof over the same area, and will, of course, be more fireproof.

Very truly yours.

GEORGE S. NELSON

Salt Lake City, Utah.

PLEASED

Dear Mr. Editor:

We were greatly pleased with the September issue of **The Architect & Engineer** and the very nice way the material was presented.

Sincerely yours,

MILLER & WARNECKE

Oakland, September 24, 1937.

ARC WELDING

Dear Mr. Editor:

A day or two ago I dictated a memorandum to some people who are interested in the work of the Arc Welding Foundation, and our proposed competition for the best papers on the subject.

The thought occurred to me that inasmuch as the real objective of the Foundation does not seem clearly understood in industry, this letter might be of interest. You may want to comment on it editorially. In doing so, you would, I feel sure, be doing industry a service.

In spite of the explanations we have tried to give regarding the Foundation and its activities, it is quite apparent from the letters I received that its real object is misunderstood.

It seems to be the general idea that we want to get a lot of papers for the publicity we may get out of them and a lot of ideas we can spread around to various people interested in welding. This is absolutely incorrect. There is one reason for welding existing and only one so far as I know and that is—you can do as good or even better a job at less cost. We believe this firmly. If this is true, and we know it is, why is it that everyone doesn't immediately turn to the use of arc welding and arc welded construction? The answer is, "people do not believe it." They may say they believe it but they don't really and truly believe that fundamentally arc welded construction is less costly than any other method of construction. If people really and truly believed this, they would let no obstacle stand in the way of adopting arc welding. Can you imagine that a manufacturer, constructor, or anyone who utilizes steel construction would continue in their present way or method, if they really and truly believed they could save from 10 to 15 per cent of their cost by using arc welded construction? They just couldn't go on with their present method. They would find ways to overcome the fact that their engineer did not know how to design for arc welding, that their salesmen did not like the appearance, and the hundreds of arguments and excuses that are put forward for not using arc welded construction.

Companies, whose men prepare papers, will benefit tremendously through savings which their men will bring out and develop in new designs. This savings will go on and on during the life of the company.

Any engineer, designer or production man who deals with iron or steel, can and should prepare papers, because—

1. They can be richly rewarded through the Foundation's awards.

2. They will gain national recognition and recognition from their company as being outstanding men resulting in their personal advancement.

3. Papers are not difficult to prepare. The men already have the knowledge of design and practice which is most essential as welding is a mechanical process.

4. They need not be masters of English. Papers may be in form of reports which engineers and designers are accustomed to make.

The welding industry will benefit during a period of years due to the expanding use of welding resulting from the Award program.

Very truly yours,

THE JAMES F. LINCOLN ARC WELDING FOUNDATION,

A. F. Davis, Secretary.

Cleveland, Ohio,

BUILDING COSTS

Mr. Editor:

Received your copy of Architects and Engineers' Specification Index. Would appreciate very much your latest copy containing "Estimator's Guide," giving cost of building materials, wage scale, etc.

Thanking you for same,

Yours truly,

M. J. SCALMANINI

Fort Mason, Cal.

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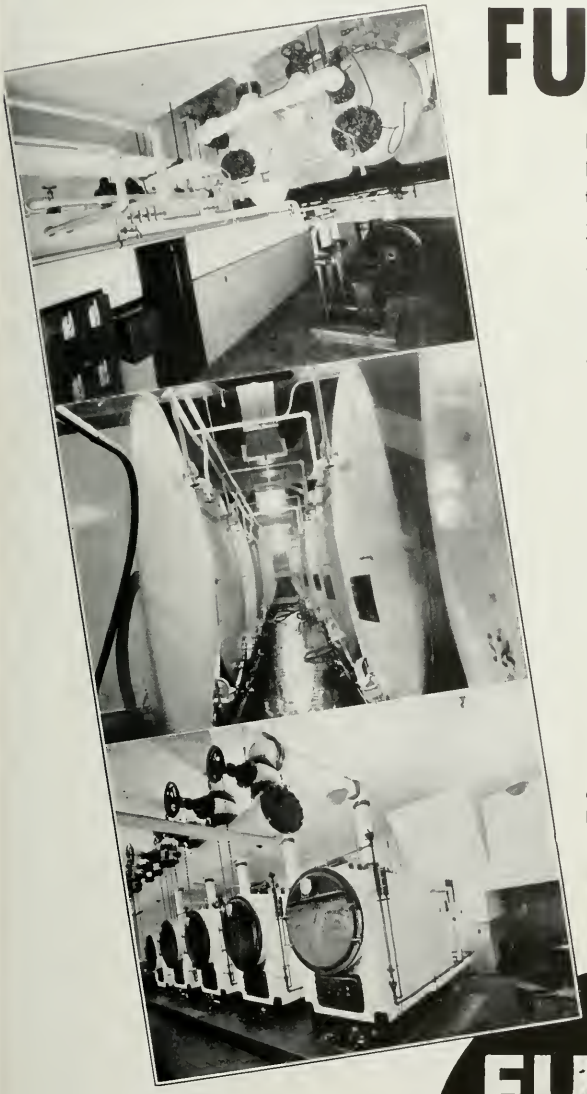

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MAIN ENTRANCE, RESIDENCE OF MR. DAVID O. SELZNICK, BEVERLY HILLS, CALIFORNIA

ROLAND E. COATE, F. A. I. A., ARCHITECT

LOOKING BACKWARDS AND FORWARDS

NOTIONS ABOUT ARCHITECTURE IN CALIFORNIA

By Harris C. Allen, F. A. I. A.

AFTER six years of gradual collapse to practically nothing at all, and a year's moderate revival of activity, architecture in California is on its feet again (even if staggering slightly) and ready to go places. A fair question now is, where is it going?

During these recent years much has been happening, both concrete and abstract, to affect the art and science of architecture (even as other phases of civilization). It seems to many people that one era has ended, or is ending, and another about to begin. At such a time it is, perhaps, wise to take stock; to consider what has been done (as it still exists for us) and what relation it has, if any, to what is going to be done—so far as we can determine what that may be.

Of course that is a very large order. But it may be scaled down, in proportion, to a narrow enough, local enough judgment to get a possible perspective that may not be too far from representative.

Local architecture can hardly be said to have existed before the late eighties—about fifty years ago. The early Missions and ranch houses may be disregarded, for they were in a small, separate class by themselves, and did not influence general building until they were "rediscovered."

A TYPICAL CALIFORNIAN-COLONIAL HOME

RESIDENCE OF MR. S. W. BIXBY, PASADENA, CALIFORNIA
ROLAND E. COATE, F. A. I. A., ARCHITECT

The Spirit of the Georges—with a Touch of the Regency—has been captured in this California home.

RESIDENCE OF MR. M. G. ESHMAN, BEL-AIR, CALIF.

ROLAND E. COATE, F. A. I. A., ARCHITECT

YOCH & COUNCIL, LANDSCAPE ARCHITECTS

To call most of the early structures "Victorian" would really be paying them an excessive compliment. It was not until the days of Page Brown (followed by his apprentice, Willis Polk) in San Francisco, and, somewhat later, of Myron Hunt and Elmer Grey in Los Angeles, that good taste and a feeling for the principles of good design began to force their way against the atrocities of pretense and sham that filled both business and residence portions of Californian cities.

With the nineteen hundreds, there came

A charming gabled composition fitting into its Californian setting of splendid English oaks.

RESIDENCE OF MR. G. G. MAYO, SAN MARINO, CALIF.

ROLAND E. COATE, F. A. I. A., ARCHITECT

rapid improvement. More and more young men began to practice who had received training in good Eastern offices, and often with the frosting of a European sojourn. It is true that this development brought on a rash of designs a la McKim-Mead-and-White, or Carrere-and-Hastings; but like the Great White City of the Columbian Fair at Chicago, it educated and improved public taste with a revelation of the impressive beauty of Classic Renaissance. The days of the false front and the jig-saw scroll ornament were past.

Northern California clung to this formal and conventional type of design longer than did the South. For in the Los Angeles region the amazing, rapid growth of population, with copious funds pouring in from oil and the movies and the Middle-West savings, served both to attract bright young men from the East, and to stimulate all of them, both resident and immigrant architects. Here was a hothouse (I had almost written a madhouse) to develop the creative and the selective instincts to an extraordinary degree, given almost carte-blanche authority to experiment and expand.

SPANISH INFLUENCE FELT

And how they did seize the opportunity! A bewildering profusion of residences, hotels, theaters, shops, club houses, sprang up all over the great plateau that is Los Angeles, and, by example, all over Southern California. Due, perhaps, to the hypnotizing effect of palm trees on the new settlers, a strong Spanish influence became prevalent in all types of buildings; and, indeed, it is still strong. Why not? It was appropriate to local traditions and climate and flora, and under the clever fingers of the Southern architects countless charming combinations were conceived.

A remarkable and outstanding point is that out of all this profuse experiment so much good and so comparatively little bad came. Some of the bad was very bad indeed, but a visitor could be merely amused by its bizarre conceit, while being aroused into real enthusiasm over the spirited and lovely compositions to be found on all sides.

Naturally, an effect was produced in the North by all this exuberant development. Having outgrown its own wild youth and feeling somewhat resentful of the sudden Southern challenge to supremacy, there was for some time an attitude of indifference. That fatal description "The city by the Golden Gate, serene, indifferent to fate," was all too effective. The feeling of being sophisticated and superior, and so, necessarily conservative in reaction to new fashions (except feminine fashions), prevented for some years any marked change from rather stiff and formal expressions of traditional architecture.

YOUTH DEVELOPS FREER HAND

But youth (which is not really measured in years) was asserting its force among Northern architects, and a much freer and more inspirational spirit began to show itself. Aside from differences in treatment due to climatic conditions, it would be hard to discriminate between much of the work today—northern or southern —except that there is more of it in the South. The illustrations accompanying this article are not completely representative of either section, but they do more or less show the point.

And there is something especially noticeable and interesting. Characteristic of this present activity is a general broad simplicity of treatment which is by no means to be confused with barren or banal lack of imagination. The present trend of design appears to be from the inside out, rather than the reverse; without discarding all the historic theories and principles of composition, rigid rules and formulas of style no longer hamper the outward expression of inward function. The sculptural anatomy of a building is not disguised by applied ornament; although the supporting skeleton is not necessarily exposed (Thank God).

I am aware that this is a very broad generalization, to which many exceptions can be taken. But I believe it to be essentially true.

And it is also true that much of the present work recognizes the value of harmony to its environment; it is at home in California and

The entrance and the garden facades of the David O. Selznick residence are designed with the classic simplicity characteristic of Mr. Coate.

A close up of garden terrace shows white-washed brick wall texture and refined detail. Note the subtly curving lines of bay window and portico.

Photographs by Haight

RESIDENCE OF MR. DAVID O. SELZNICK, BEVERLY HILLS. ROLAND E. COATE, ARCHITECT

Interior views show that the room treatments have been well adapted by Mr. Coate to their various functions.

Chinese motifs have been adopted for the game room, shown below, and a special room housing a collection of Oriental art. The use of bamboo gives an open-air effect.

RESIDENCE OF MRS. RICHARD B. FUDGER, BEVERLY HILLS.
ROLAND E. COATE, ARCHITECT

The Fudger home is of Georgian character, happily adapted to a Californian environment.

A particularly delightful garden front treatment employs a paved terrace between the two shallow wings; the dining room bay is balanced by a square loggia. Two great oaks frame the picture and shade the lawn.

could not satisfactorily be transported elsewhere. The spirit of Californian tradition has not vanished; even as our sunshine still repels the onslaughts of frost and snow.

What of the future? When the present situation of world civilization is so puzzling, even to our professional wise men, it is a rash amateur who will prophecy any far development—except that art and science are so vital, so inextinguishably fertile, that no crisis or crash has ever been able to destroy their continued evo-

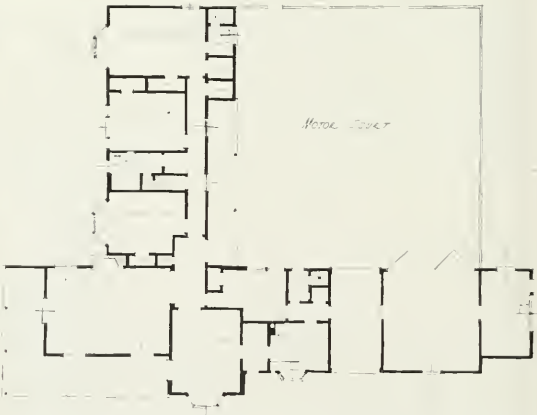
hoto by Geo. D. Haight

ESIDENCE OF MR. A. S. COUGHLIN, BEL-AIR, CALIFORNIA
H. ROY KELLEY, ARCHITECT

ution. There have been recurring cycles of progress and of inertia. Unless hysteria prevails permanently over sanity, there should be an extremely interesting, appropriate and extensive development of Californian architecture during the next cycle—which ought to last at least eighteen years, according to charted experi-

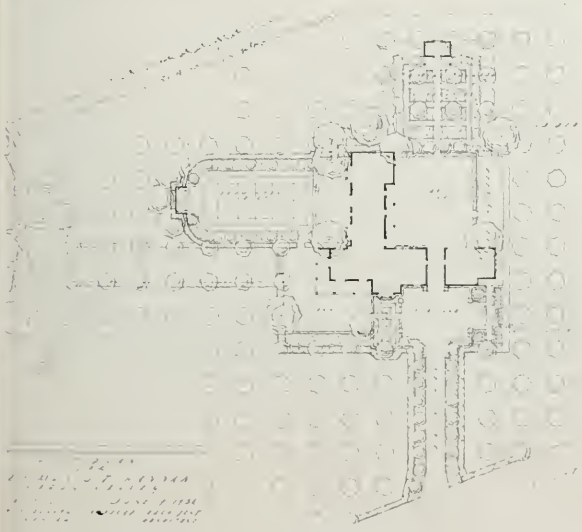
RESIDENCE OF MR. JAMES T. HANNAN, HAPPY VALLEY, CALIFORNIA

FREDERICK L. CONFER, ARCHITECT



An unusual arrangement in which the main entrance is withdrawn to an enclosed courtyard, all visitors arriving by motor cars at this country home in Contra Costa County, California.

Photos by Waters & Hainlin



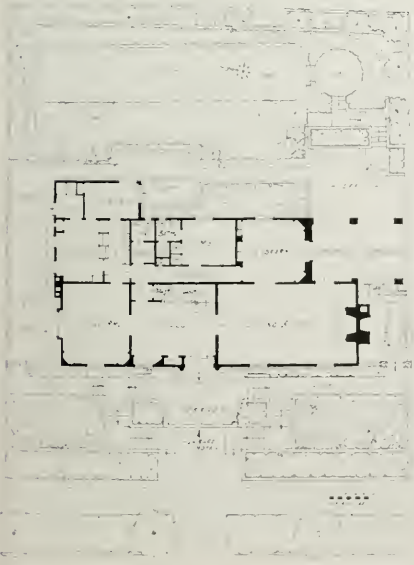
A comprehensive and interesting plan of planting, by N. S. Rucker, Landscape Architect, shows that main living quarters of the Hannan home will be well shielded from highway and driveway. Frederick L. Confer, Architect.

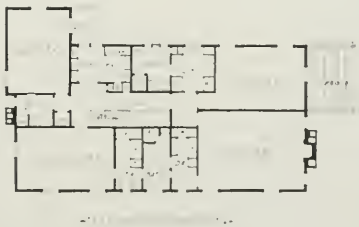
A BARBECUE COURT LOOKS UP TO THE TERRACED HILLSIDE

RESIDENCE OF MR. C. W. SMITH, SAN FRANCISCO, CALIFORNIA

HENRY H. GUTTERSON, A. I. A., ARCHITECT

Photographs by Moulin





Residence of Mr. C. W. Smith, designed by Henry H. Gutterson, A. I. A., to command a view over the lower slopes of St. Francis Wood, in San Francisco, to the great expanse of the Pacific ocean. A roof of clay tile shingles is in various quiet weathered shades.

Interiors of the C. W. Smith residence are treated with a quiet refinement in harmony with the exterior design.

A spacious, wood-paneled entrance hall sets the keynote to the generous proportions of the house, which "opens up" well.

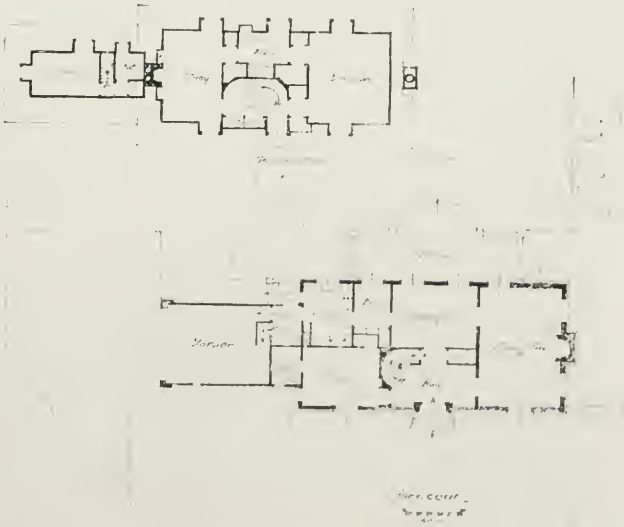
THE RESIDENCE OF MR. W. KLAASEN HAS JUST BEEN COMPLETED AT ATHERTON, CALIFORNIA, BY HENRY H. GUTTERSON, A. I. A., ARCHITECT. A PRESENTATION DRAWING INDICATES THE FINE NATURAL SETTING OF THIS CHARMING COUNTRY HOME.

At this time of rising costs in building construction, it is highly desirable to give special consideration to the amount of labor involved in carrying out any building project. The plans of the two residences here shown, those of Mr. C. W. Smith and of Mr. W. Klaasen, give substantial evidence of such consideration and are well worth special comment.

In each case, a compact, rectangular mass has been contrived, which satisfied all requirements of space, circulation and proper inter-relationships, without sacrificing the essentials of good design. Such practical points as close locations of plumbing stacks, stairways, flues, are combined with the fulfillment of aesthetic ideals; main living and sleeping quarters are provided with direct access to views, to terraces or porches, to gardens.

It may be pointed out, too, that such designs, simple and straightforward in mass, proportion and line, lend themselves well to the decorative influences of landscape planting and of time; they are not so apt to become obsolete and out of fashion; they are easier and less expensive to maintain; they "wear well."

It is too often forgotten that a residence is basically a background for family life, not just an ornamental spot in a landscape. To combine practical and aesthetic considerations without going to either extreme is the aim and duty of every good architect.



VIVID COLORS AGAINST A SOUTHERN SKY

THE DOME, POST OFFICE, REDLANDS, CALIFORNIA

G. STANLEY WILSON, A. I. A., ARCHITECT

POST OFFICE, REDLANDS, CALIFORNIA
G. STANLEY WILSON, A. I. A., ARCHITECT

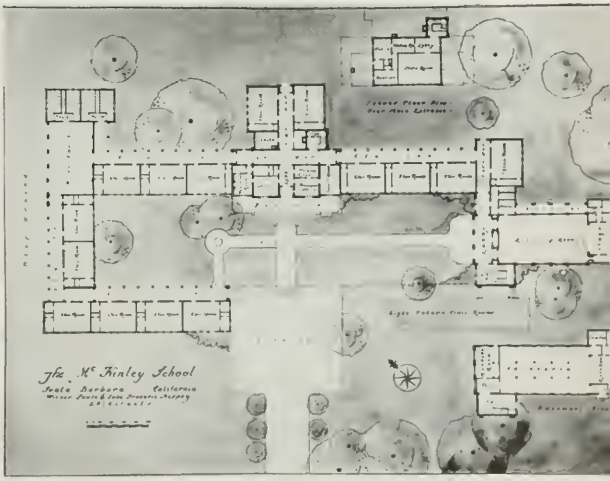
HIGH SCHOOL GYMNASIUM, REDLANDS, CALIFORNIA
G. STANLEY WILSON, A. I. A., ARCHITECT

THE ROMANTIC ATMOSPHERE OF OLD SPAIN IN THE NEW WORLD

PLAY COURT, McKINLEY SCHOOL, SANTA BARBARA
WINSOR SOULE & JOHN FREDERIC MURPHY, A. I. A., ARCHITECTS

Photos by Collinge

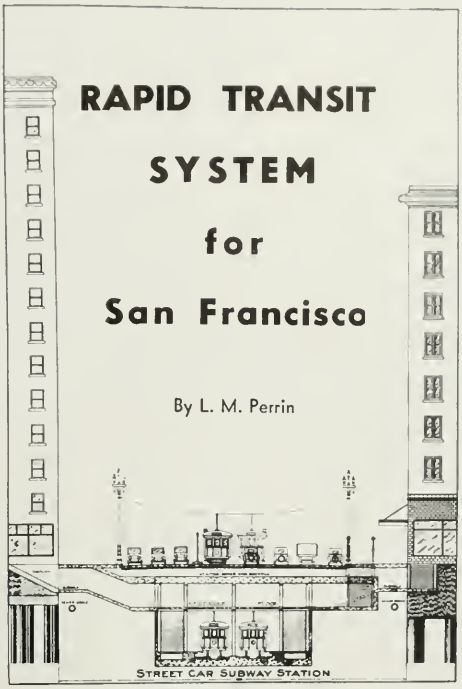
Santa Barbara has established a type of design for community buildings, in harmony with the Spanish traditions of her history—and well suited to her balmy climate with its luxurious growth of planting. The new McKinley School, designed by Winsor Soule and John Frederic Murphy, A. I. A., received an Honor Award in a recent judging.



ence. There will be more new materials to use, and some changes in methods of construction. Nature will not change, in its manifestations of climate and soil; and human beings will try to promote their happiness by adjusting their housing to all these conditions, with a modicum of sentiment included. The present trend is along these lines.

The Morro Bay School, top, and the San Luis Obispo High School Gymnasium, are the work of Louis N. Crawford, A. I. A., and will be harmonious features of that sunny southern land. H. J. Brunnier as engineer, had some unusual structural conditions to meet.

TO VOTE BONDS FOR SUBWAY AND SURFACE RAILROAD



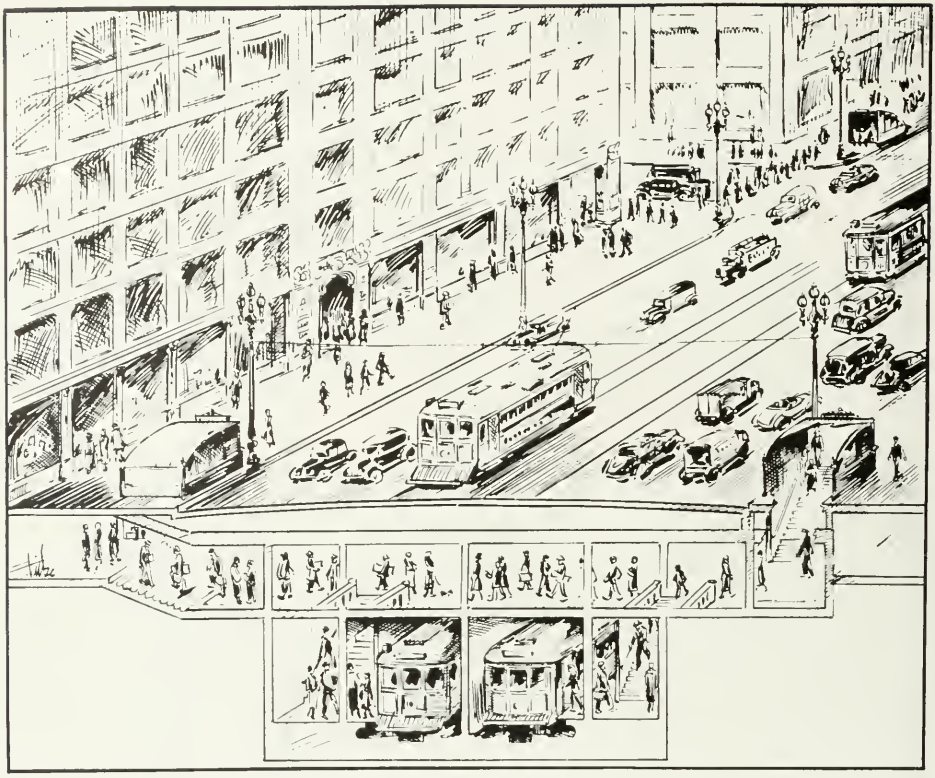
Typical section of Market Street at subway station, 120 ft. street, 76 ft. between curbs; six lines of motor vehicles; two surface car lines and two subway car lines.

SAN FRANCISCO'S vote November 2 on a proposal to issue $49,250,000 worth of bonds for the construction of a rapid transit system, will climax five years of work by her engineers.

The proposed system is based on a careful study of possible routes to get maximum service for the investment entailed, and a system that would fit into an anticipated future development of the city. This survey included a review of past traffic checks and development trends and the underlying causes of each. Because the hilly topography of San Francisco raises problems of grades and accessibility, a large number of preliminary profiles were drawn up.

Alternate plans for routes were submitted by many interested individuals and organizations. After due consideration, these invariably proved unsuitable in the light of a knowledge of engineering and transportation requirements. Several of the most favorable routes were submitted to Robert Ridgway and Alfred Brahdy of New York, world-famous transit specialists, as consulting engineers. The consultants also checked plans of the selected routes in sufficient detail to determine quantities and offer project estimates.

As it was finally recommended, the project consists of a combination subway and surface rail system with bus feeders connecting all of the important residential districts with the central business area. The design permits of extensions as and when desirable, the primary installation forming in effect the nucleus of a possible trunk system.



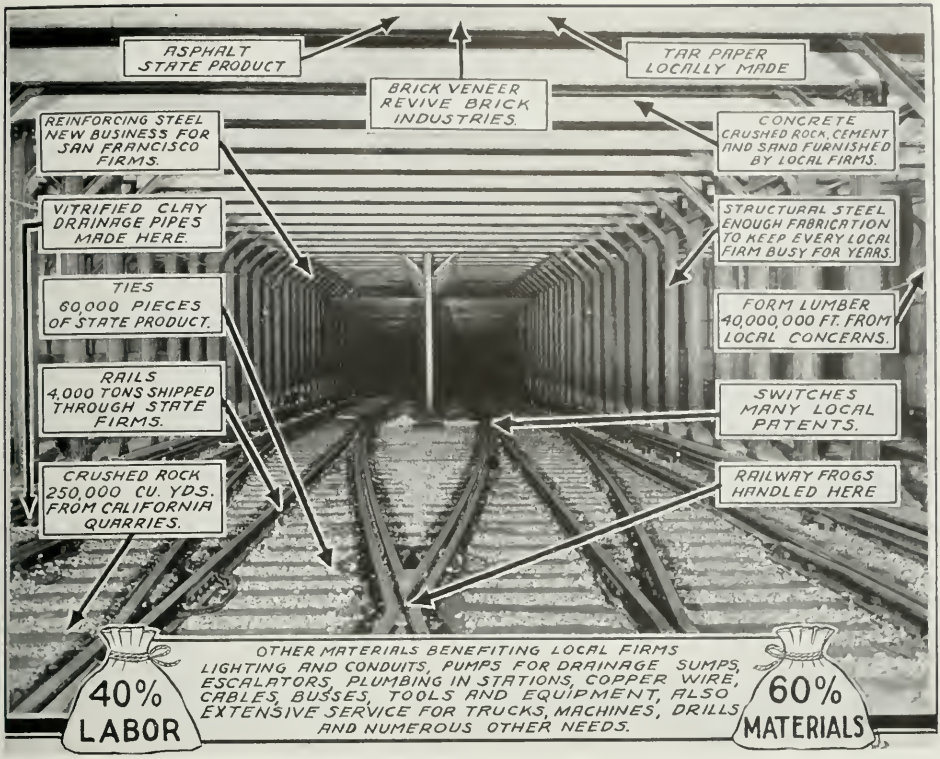
DRAWING SHOWS PROPOSED SURFACE AND SUBWAY TRANSPORTATION SYSTEM FOR SAN FRANCISCO

THREE SUBWAY ROUTES

The Market-Fremont route consists of a subway about 2½ miles long. Cars will enter by means of a ramp on Market Street at Church. A braided junction will connect with the Mission rapid transit route at Van Ness Avenue South. At Market and Fremont Streets, a turn will take the subway along Fremont to the rail terminal of the San Francisco-Oakland Bay Bridge, with turn-back facilities just beyond the station. If found desirable in the future, this route may be extended to the Southern Pacific Depot at Third and Townsend Streets and to the Twin Peaks Tunnel at the other end.

The Mission route, from a junction with the Market Street line, goes under Mission Street to the old Southern Pacific right of way, along which it proceeds, to rise to the surface near Twenty-Seventh and Dolores Streets and run above ground to a terminal at Ocean Avenue. Busses will extend the facilities into all outlying residential districts. The subway portion is 2.2 miles long, the surface right of way 2.3 miles in length.

A 2½-mile subway on Geary, Market and Montgomery Streets distinguishes the Geary-Montgomery route. A ramp on Geary, west of Steiner Street, will take surface cars into the subway, to return to the surface on another ramp on Columbus Avenue, just off Montgomery Street. A station for transferring will separate the Geary-Montgomery from the Market subway cars on Market Street.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BRICK VENEER REVIVE BRICK INDUSTRIES.
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VITRIFIED CLAY DRAINAGE PIPES MADE HERE.
STRUCTURAL STEEL ENOUGH FABRICATION TO KEEP EVERY LOCAL FIRM BUSY FOR YEARS.
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SWITCHES MANY LOCAL PATENTS.
CRUSHED ROCK 250,000 CU. YDS. FROM CALIFORNIA QUARRIES.
RAILWAY FROGS HANDLED HERE
OTHER MATERIALS BENEFITING LOCAL FIRMS
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40% LABOR
60% MATERIALS

HOW EXPENDITURE OF 49 MILLION DOLLARS WOULD BE DISTRIBUTED TO THE BUILDING INDUSTRY IF RAPID TRANSIT SYSTEM IS BUILT

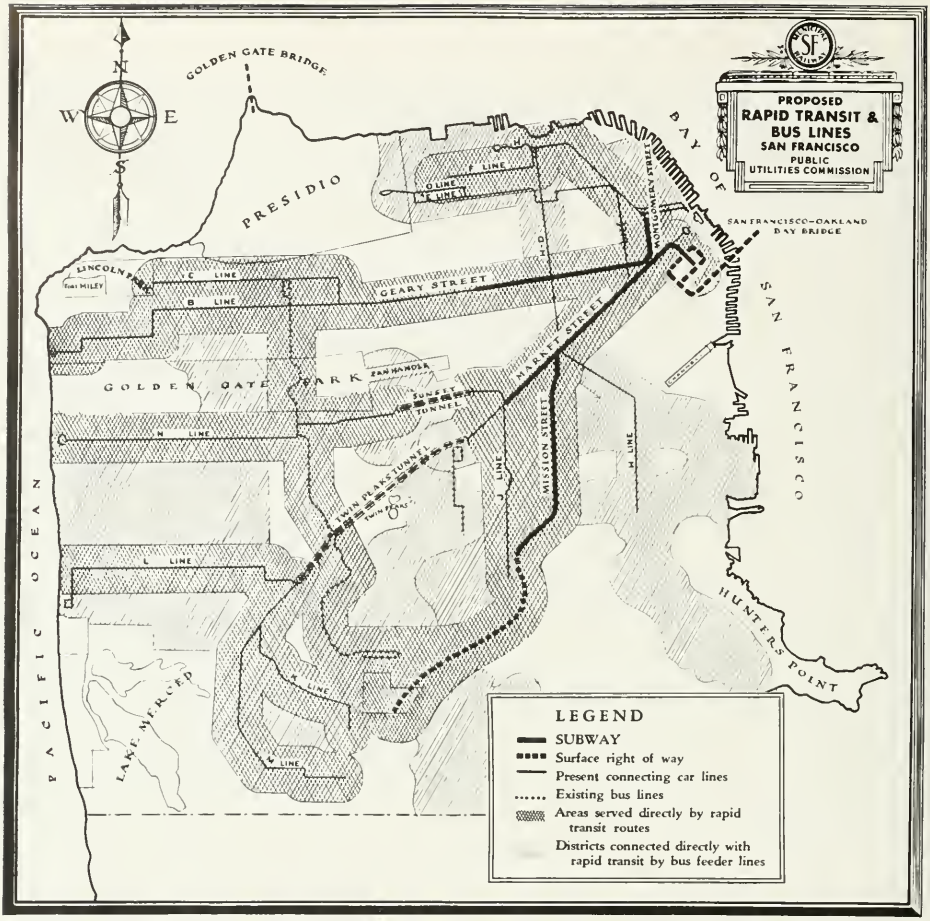
STEEL AND CONCRETE STRUCTURE

Double-track subways, to follow in general the New York standards, will prevail. The structure is designed to be in equillibrium without use of piling, in accord with the usual practice. The frame will consist of steel bents with center columns between tracks and cement jack arches between bents. Bottom slab will be reinforced where necessary to resist uplift. Utility space will be provided by a minimum of 6 feet of cover. In certain short stretches of tunnel under hills, the usual horseshoe section will replace the rectangular bore used elsewhere.

On Market Street, stations will be of the mezzanine type to permit access to platforms from either side of the street and from store and building basements. Other stations will be mostly of the high level type. The estimates provide for station platforms 450 feet long, of line and grade suitable for extension to 650 feet, New York City's present maximum.

Except at tunnels, construction will be of the cut and cover method, without interference to surface traffic by excavation being carried on under street decking.

Pursuant to findings of a survey of subsurface utilities along the proposed routes made by the W.P.A., all gas mains will be temporarily bypassed during construction. As far as possible, other utilities will be kept in place and supported by staging for the street surface. Tile ducts and brick sewers will be reconstructed over the subways. It is possible that utilities will use



opportunities to consolidate and reorganize their duct lines when interferences occur and rearrangement is necessary.

Although some of San Francisco's downtown streets are congested with underground utilities, space under the car tracks where the subways will be located is comparatively free.

ROLLING STOCK

Plans include use of present cars, supplemented by the addition of 35 new cars and 74 gasoline and trolley busses. Cars now in service will be modified by the addition of power-operated doors and some of them will be equipped with couplers for multiple-unit operation in rush periods.

Energy will be obtained from Pacific Gas & Electric Company substations, with some rearrangement of feeders to permit of adequate sectionalization. The estimates provide for catenary trolley underground, with the messengers serving as feeders.

Automatic block signals will be installed in the subways and along the surface right of way to permit of minimum safe headways. All switches in regular use underground will be interlocking, and a complete telephone network will cover all rapid transit routes.

Standard lighting will be provided in the subways with high intensity illumination at the stations. The Bay Bridge Terminal station also will have an escalator to speed up the handling of mass traffic. Pumps will be installed at all grade dips for drainage and to flush toilets below the sewer grade at some stations. Ventilation will be by fans of sufficient capacity to provide plenty of fresh air even with cars stalled.

ANALYSIS OF 1937 UNIFORM BUILDING CODE

By A. L. Brinckman

THE 1937 edition of the Uniform Building Code was adopted by the Pacific Coast Building Officials' Conference October, 1936, and was published in April, 1937. This 1937 edition represents nine years of hard work studying the original code officially adopted by the Conference at its sixth annual convention in October, 1927, after some six years of preparation, investigation and editing. The feeling we had in 1927—that the latest available scientific information needed for sound economy and reasonable safety in construction had been codified in a manner easily utilized and logically arranged—is our feeling again today.

Some points that may be controversial have been compromised, but always on a conservative and reasonable basis (Such a case in point is the basis for designing plate girders on the "gross-area" theory).

In general, the codification and sectionalizing are unchanged, but some specific changes and additions were deemed necessary in the interests of clarity and usefulness.

CHANGES

1. Chapter 39 in the new code deals with "Stages and Platforms," whereas this chapter formerly dealt with "Stage Ventilators" only.

2. Chapter 41 now deals in greater detail with "Proscenium Curtains."

3. Suggested Chapter 47 deals with "Plastering" and is printed as an Appendix.

4. Suggested Chapter 48 controls "Film Storage" and is printed as an Appendix.

5. Suggested Chapter 49 regulates "Mechanical Refrigeration" and is printed as an Appendix.

(6. A new Chapter 50, "Billboards," is under consideration but is not a part of the 1937 Code.)

7. The informative and valuable "Appendix" contains also sections dealing with such subjects as "Lateral Forces," "Flame-Proofing," "Construction Practices," "Foundations," "Weights of Materials," and "Reviewing Stands." These are so arranged that they may be brought into the body of the Code whenever any city or county desires to adopt them as part of their code, or they may be left as appendices which can be referred to when questions or guidance in such matters are sought.

8. A most complete Index has been prepared, and as it refers to Section Numbers and not pages, it will ordinarily serve for any local adoption as long as new Section Numbers are not introduced.

ANALYSIS

Now, in more detail, an analysis in outline form of the Code may be stated.

Part I—Administration

This part, Chapters 1, 2, and 3—is usually the least interesting part of any ordinance because it deals entirely with administrative problems and enforcement, but every owner, architect, engineer and contractor should be informed of its provisions, which include approval of alternate types of material and or construction, penalties for doing work without permits, fees, inspection procedures, and powers of the Inspector on a job. No material changes were here made.

Part II—Definitions

This includes Chapter 4. The principal changes were in the definitions of the various kinds

Editor's Note—The author, Mr. Brinckman, is Building Inspector for the City of Berkeley, and Member of the Structural Engineers Association of Northern California.

of "walls." Note that a Code "Apartment House" starts at three families in a **one-story** building; the State Housing Act "Apartment House" starts at three families in a **two-story** house.

PROTECTION TO LIFE

Part III—Requirements Based on Occupancy

This part is the foundation and unique feature of the Code; all buildings are "grouped" according to the **life hazards to occupants** presented by the use of the building. This is a logical basis on which to specify types of construction, egress facilities, fire protection and structural requirements.

Chapters 5 to 15 are included, and Chapters 5, 6, 7, and 8 have undergone considerable change. Liberalization and economy have been permitted in various groups, and mixed occupancies, by provisions where the fire-resistiveness of occupancy separations is stipulated. Comparisons of the Tables on Pages 38 and 39 in the 1937 Code with the corresponding Tables in the old code are instructive, and indicate a progressive but safer change in "built-in" fire protection considerations.

Seating capacities, stage construction and exit requirements for major, medium-sized and small assembly halls, theaters and similar occupancies have been more rationally assigned, and the writer can testify to two specific instances in his jurisdiction where Type V construction was permitted, with complete safety to occupants and neighbors; where under the old code, good as it was, a Type III structure would have been required. The whole change depended on seating capacity being 600 units —in Group B, Div. 2, under the 1927 Code, but in Group C, Div. 2, under the new code, wherein seating capacity was raised from 500 to 750 in this particular group.

FIRE ZONES

Part IV—Requirements Based on Location in Fire Zones

This part includes Chapter 16; no startling changes have been made, but the problem of a building lying in two or more zones has been settled by declaring that the building shall be considered to be in the most highly restricted zone in which more than one-third of the structure's area is located. This is worth considerable study, as one may figure a Type III (Class C) building with wood lath and plaster finish, only to find it is in Fire Zone I and requires one-hour fire-resistive finish. Note also that 20% is the limiting figure for repairs in Fire Zone I, whereas in Chapter I a general clause allows 50% repairs before conformity with new construction, or demolition, is necessary. Insurance policies on Fire Zone I buildings should be carefully written because of this provision.

BUILDING TYPES

Part V—Requirements Based on Type of Construction

Chapters 17 to 22 are included in this part, and although Type numbers are used to describe fire-resistive characteristics of structures, they correspond as follows to the traditional "Class" of construction:

Type No.	Class
I	A
II	B
III	C
IV	D
V	E

Any building which is partly one type and partly one or more other types must be classed or "typed" as the **least fire-resistive** type, thus following insurance principles by imposing penalties (reduction of height, floor area, etc.) on mixed construction.

LESS COSTLY MATERIAL

Important changes, permitting more economical construction, will be noted in Chapter 20—Type III (Class C) buildings. Here such buildings, under certain fire-exposure conditions, may have light, **incombustible** spandrels,

fronts and pilasters when such materials are given proper (one-hour) protection. Thus the costly deep monolithic spandrels are no longer necessary, but meanwhile **reasonable** and adequate protection is obtained, and the saving is apparent.

Part VI—Engineering Regulations; Quality and Design of the Materials of Construction

Chapters 23 to 27 are included, and most notable changes have been made.

ECONOMICAL BRACING

Chapter 23 is about the same, unless the Appendix Section 2312 is included, and then "Horizontal Force" regulations really go to town. The provisions are reasonable, but their application, if skillfully made, will show a **saving** over rule-of-thumb bracing designs, and a thorough study of this section will reward the designer with lower costs but adequately braced structures.

Chapter 24—"Masonry"—is completely rewritten in the light of latest developments in this universally used medium. Stresses are raised, but only where competent design and good workmanship justify such "bonuses."

SAVING IN WOOD

Chapter 25—"Wood"—has been rewritten; economical design and use of wood are at last codified, and lie at the hand of anyone who will take the trouble to study this Chapter.

SAVING IN CONCRETE

Chapter 26—"Reinforced Concrete"—is rewritten, and may be said to be identical with the American Concrete Institute's recommended building code provisions. Economy in its use can be obtained by taking advantage of the principles of continuity set up in this Chapter.

SAVING IN STEEL

Chapter 27—"Steel"—has been rewritten on the basis of the 1936 recommendations of the American Institute of Steel Construction. The raising of basic working stresses, the refinement of formulae, and the rational specifications, all tend to economical and adequate design.

Part VII—Detailed Regulations

This part includes Chapters 28 to 41, and the only major changes are found in Chapters 39 and 41, as mentioned above. More comprehensive details are given so that specifications can be intelligently written that will reflect the requirements of the Code, but will not necessarily express the most costly way of so doing. The part on excavations has been strengthened.

Part VIII—Fire-Resistive Standards

Chapters 42 and 43 make up this part, and are vitally important in all considerations of types of construction.

FIRE RESISTANCE

Chapter 43 has been considerably changed, on the side of economy but with no sacrifice of safety. For instance, in the new Code plasterboard is given ratings up to two hours, whereas in the 1927 Code such was not the case at all. Why? Because recent research and fire tests have shown that such allowances are perfectly safe and reasonable.

Part IX—Occupancy of Public Streets

Chapters 44 and 45 remain unchanged.

Part X—Legislative

No change has been made in Chapter 46.

Part XI—Special Subjects

This part is discussed above, referring to Chapters 47, 48, 49 and 50.

All in all, the new Code is a brilliant step forward in Building Code work, and is strongly recommended for close study and use.

SMALL HOUSE PLANS - - - - BY P. J. McGUIRE

IN the Federal Home Building Service Plan is the solution which has eluded the ponderings of a thousand architectural "small house" conferences and committees. The chance exists that the Plan will achieve what countless "committees of public information" have futilely labored to do . . . it should convince the investor in a home that an able, reputable architect can endow his house with beauty, his occupancy of it with comfort, his investment in it with stability.

For the Plan promises, (1st) a clear-cut argument presenting to a wide-spread public the value of architectural service; (2nd) it provides a simple and direct means toward making such service generally available; (3rd) it explains and describes and urges the home-owner to enlist in his own interests the architect's expert abilities; (4th) powerfully, it backs up the argument with the sponsorship of a great agency of the Federal Government and the willing support of hundreds of mortgage-lending institutions.

Like every good plan, the Plan is simple and sound . . . fundamental. It sees the wise investment of home-minded folk as the foundation of national well-being. It seeks the assurance of capital well lent as the frame-work of economic stability. It recognizes the talent, the skill and the integrity of the artist and the artisan as the factual measure of our civilization.

Briefly, the Plan's operation is as follows:

Federal Home Loan banks will recognize as prime collateral those homes which are the approved products of approved architects, will accept loans for the construction of such homes as the "blue chips" of mortgage investment.

Emphasizing this view, the bank board will enlist its many member lending institutions in a campaign to increase architectural participation in small house building as the first safe-guard of their clients' investment and the consequent best security for their loans.

To applicants for mortgage loans, participating lending institutions will describe the values of architectural service and arrange for a conference with an approved architectural group. In Northern California, the Federal Home Loan Bank Board has approved the Architects' Home Building Service, of San Francisco, as the architectural agency to represent the Plan.

After canvassing the applicant's needs and preferences, the Service assists in the preparation of a program detailing the size, type, and plan requirements of the building needed. This program, together with a plot plan or contour map of the site, assigned to a member-architect, provides a clear statement of the problem involved, and the architect proceeds to design a sound solution. A preliminary plan and sketch are furnished to the Service for the client's study and, with suggested changes noted, returned to the architect for the preparation of finished drawings and specifications.

The taking of bids, awarding of contracts, and the supervision of construction are entrusted to a well-trained supervisor of construction in the employ of the Service and the architect's personal participation is terminated.

To the owner of a house built under the conditions of the Plan, the Federal Home Loan Bank System awards, upon completion, an official certificate of registration attesting its approval of the design and bearing the endorsement of the lending institution financing it.

The Plan is not presented as a substitute for complete, personal architectural service. Limited to homes costing not to exceed $7,500.00, it seeks, rather, to introduce to the investor in a home, the essential values and safe-guards which the architect imparts but which are seldom afforded by the family of modest means.

Lagunita Court, Stanford University Dormitory for Women. Constructed in 1934 the dormitory now is being enlarged by the addition of two wings. Steel wall panels were fabricated in the plant of the Edw. Soule Co., San Francisco, while foundation work was in progress, then transported to the site, erected and arc-welded into position. The original Lagunita Court was the first building of its type to be constructed on the Pacific Coast. Plans were prepared by Arthur Brown, Jr., and Bakewell & Weihe, Associate Architects. Preliminary research was done by Professors J. B. Wells and A. S. Niles of the University faculty.

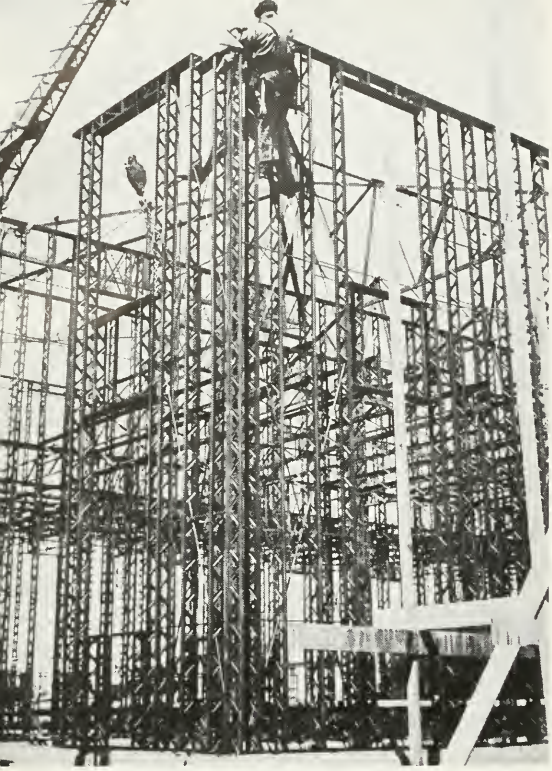
"LAGUNITA COURT" BUILT TO MEET EVERY REQUIREMENT

TRADITION builds a romantic background for college life. At Stanford University tradition and the natural beauty of the campus—hill-sheltered, aloofly remote from its neighbor community, Palo Alto; lazing in the sunshine of its peninsula setting; secure in its growth and recognition; alert to the needs of present-day world activity and progress, Stanford points the way for many larger and smaller institutions of learning by adopting modern methods of safeguarding, sheltering the students entrusted to its care.

Wholesome, safe surroundings are of as great importance to the welfare and social activities of the student body as is the college curriculum.

It was with this in mind that the faculty provided against overcrowding its young women by erecting Lagunita Court, a woman's dormitory, and the subject of this discussion. As originally planned and built, it was to accommodate two hundred young women. Shaped like a giant "O" and two stories high, it was the last word in institutional group-housing. Included in the structure were social halls, dining rooms and kitchen facilities, laundries for the personal use of the students, trunk rooms for the storage of baggage, shower and toilet rooms and single and double living accommodations.

True to the traditions surrounding this great educational institution, Lagunita Court was no ordinary building. Stepping far ahead and envisioning the future greatness of the institution, steel was selected as the framework for this



Factory fabrication of the frame, permitting immediate erection when foundation has been prepared, is one of the principal distinguishing characteristics of the Soule Unibilt steel frame utilized for construction of Lagunita Court and its two new wings. Two steps in erection are illustrated in the photographs shown above and below.

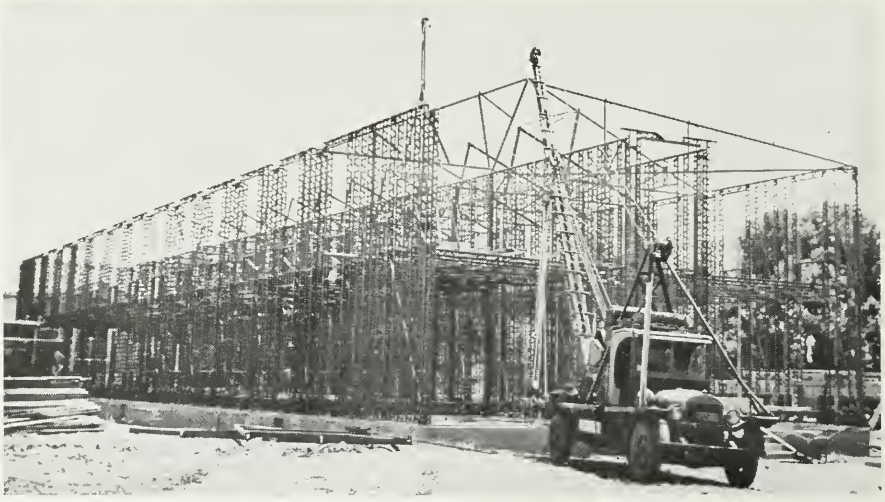
structure. Two members of the faculty, Professor J. B. Wells and Dr. A. S. Niles, both research engineers, were entrusted with the research that resulted in the building of this fire-safe, earthquake-proof, long-life structure.

Selecting Soule Unibuilt steel frame construction as the most satisfactory because of its close adherence to recognized building standards and precedent, the two engineers passed upon each structural detail and found them entirely satisfactory for the needs of such a structure for so outstanding an institution.

Lagunita Court was the first light steel-framed building to be erected on the Pacific Coast. It was the combined thought and engineering skill of the Soule Company's engineers that produced this light steel-framed building.

Now that the original building has had three years' occupancy, the University again finds it necessary to expand facilities. Two more units are being constructed as wings to the original building. These will provide accommodation for eighty additional women students, together with the necessary kitchen and dining facilities, storage, bath, dressing rooms and laundries.

The steel frame as used in Lagunita Court is arc-welded and the two new wings now being built will receive similar treatment. The studs have open webbing and are 6 inches deep, prefabricated into panels that will extend the en-



tire height of the building and averaging 10 feet 6 inches wide. These panels, after fabrication, are transported to the building site and erected on foundations prepared during the fabrication.

Floor and roof joists are manufactured according to the requirements of the Steel Joist Institute, and are placed separately after the erection of the steel wall panels.

All joints are arc-welded. Lateral and transverse bracing is accomplished by passing channels and rods through the open webbing and arc-welding into place, having first been given initial tension.

All exterior walls and the corridor walls are load-bearing. Joists extend from the exterior walls to the corridor walls, with short joists over the corridor.

All wall panels and joists are arc-welded into place on the foundation.

Since Lagunita Court was first built, many steel-framed structures have been erected on the Pacific Coast by the Soule Steel Company. Homes, hospitals, commercial and factory buildings are constantly being built with this latest method of protection against fire, earthquake, termites, dry-rot and decay.

The insurance rates on Lagunita Court are about one-half what they would be were the building constructed of wood frame. Maintenance costs are minimized to almost the vanishing point.

Arthur Brown, Jr., and Bakewell and Weihe, associate architects, prepared the plans and George Wagner was in charge of construction for the University. The fabrication and erection of the framework was done by the Soule Steel Company in accordance with the standard practice of the Institute for light steel structures.

Stanford University, regardless of campus tradition, steps ahead in pointing the way for other institutions to make the stay of the student body more pleasant and safe. Lagunita Court is but a forerunner of what may be expected from our schools and colleges within the next decade.

* * * *

Housing Act Revision

Almost before the ink is dry on the Wagner Housing Act, agitation has been started to push through liberalizing amendments in the next Congressional session.

Local housing authorities are behind the move to eliminate what they term restrictive provisions. One amendment that may be proposed would reduce still further the present local contribution, amounting to 10 per cent of the capital cost and 20 per cent of the annual subsidy charge.

ONE OF THE NEW WINGS TO LAGUNITA COURT

A COMPETITION

To Select an Architect for State Buildings

GOLDEN GATE EXPOSITION

Five Million Dollars have been appropriated by the California State Legislature for State representation at the Golden Gate International Exposition—and a Commission has now been appointed by Governor Merriam to be in charge of this work.

The architect who is to design and supervise the building or buildings for this purpose, should obviously be of the highest standing and ability; the buildings themselves should embody the best available ideas, to fit their environment and their functions, and to be truly representative of the great State of California with all its features and traditions and beauty.

Certainly the fairest, most satisfactory way of obtaining such a result lies in a statewide competition, held along the well-established lines laid down by the American Institute of Architects, with its safeguards of equal opportunity, anonymity, a program properly prepared by a professional advisor, a competent and unprejudiced jury.

Provision should be made for a possible young and inexperienced (but brilliant) prize-winner to be associated with an older firm of good standing. Under these conditions the best solution of the problem involved can be safely expected; and a nation-wide favorable publicity is bound to follow—an item of great importance in this case. For publicity is the life-blood of an International Exposition.

We respectfully recommend to the Governor and to the Commission this method of selection as the only one which will meet all reasonable objections, and which has proved its efficiency many times, in our own experience and throughout the country.

EVILS OF THE FREE PLAN SERVICE

The moral of this story—Architects should protect their interests with a written agreement.

THIS is the story of an architect's day in court. It is being transcribed for the information and benefit of the profession. Names are fictitious, for obvious reasons.

Mr. Smith, A. I. A., was asked to make preliminary plans for a residence to be built on a narrow, deep, sloping lot in San Francisco, owned by Mr. and Mrs. Jones. An approximate cost limit was set at $6,000.

To understand the conditions of employment, it should be explained that Mrs. Jones visited a "Small House Bureau," saw among exhibited plans one designed by Mr. Smith for a similar problem. The manager of the bureau arranged a meeting, meanwhile informing Mrs. Jones in detail about the functions of an architect, the standard fee for residential work (10% of total building cost) and the established method of progressive payments on the fee. This was his regular practice with all visitors who expressed interest in building.

After the first meeting, Mr. Smith started work on plans, and during a period of about three months had frequent conferences with his clients, mostly spent considering the second of two schemes submitted. The customary discussions about details of arrangements were held, with the usual process of adjustment and minor change to meet wishes and objections and practical considerations. Finally, the only feature not settled to the apparent satisfaction of the clients was the exterior treatment of the main entrance. By this time a survey had been made, ordered by the architect at the request of the clients, and the plans had proceeded well into working plans.

At this point, Mr. Smith was notified in a telephone conversation that Mr. and Mrs. Jones had decided not to go ahead on account of increased building costs. A bill for $120 was then sent to Mr. Jones, for architectural services in furnishing preliminary plans, being the customary 1 5 of 10% on estimated cost of $6,000.

Payment was refused, and after some correspondence Mr. Smith brought suit for his fee. Being an architect who had consistently upheld high standards of professional practice, and who had held office in the local Chapter of the American Institute of Architects and in the State Association of California Architects, he decided that he ought not let the matter drop; there was a principle involved, even though the amount was so small that full payment would hardly cover the costs of the suit. The decision should produce one of two things: either a warning to the public not to expect free plan service, or a warning to architects not to leave themselves unprotected by written or witnessed agreement with clients.

The suit came to trial. Mr. Smith testified to being requested to make plans, identified the successive sets of plans up to the final set (showing no change notes or other corrections, unlike all previous sets) and that no agreement for payment for services had been made, other than the statement made by the bureau director, in his introduction, that he had explained to Mrs. Jones the standard procedure, which was satisfactory to her. The director testified to this effect.

Mr. and Mrs. Jones testified that they had made a verbal agreement with Mr. Smith in his office (no other witnesses being present) to the effect that unless preliminary plans were satisfactory to and accepted by them, no fee would be charged and no payment made; that although when Mr. Smith was told to stop work, he was not told in so many words that the plans were not satisfactory, nevertheless they were not satisfied and could not accept the plans. Therefore, in accordance with said agreement, they did not owe him anything.

The decision was, in substance, that since these were people in modest circumstances with a limited amount to spend for building a home, they would naturally try to protect themselves from paying for plans they might not wish to use, and that some stipulation was probably made which was presumably overlooked by the architect, who was nevertheless sincere in his belief and had done a great deal of work; a judgment, therefore, was entered for the defendants.

In recapitulating the story of this case, a moral is clearly to be seen; that it behooves all architects, before starting work, to secure an agreement with their clients, either witnessed or (preferably) written, in accordance with standard practice. Thus, quoting from the A. I. A. form of agreement between owner and architect,

"If any work designed or specified by the Architect is abandoned or suspended the Architect is to be paid for the service rendered on account of it." The customary progressive payments on account of fee and for any extra services are specified; and, of course, the initial agreement:

"The Architect agrees to perform . . . professional services as . . . set forth. . . .

"The Owner agrees to pay the Architect for such services a fee of per cent of the cost of the work. . . ."

Many architects protect their services by writing a letter to the client, after a first conference, reviewing the verbal agreement and requesting a written confirmation, which can be simply a marginal okay with signature. This is probably as safe legally as is usually necessary.

The conduct of this case brings certain conclusions. Evidence as to the inherent improbability of a professional man's agreeing to a type of practice which as an official he had opposed for many years, is apparently not admissible. As Mr. Smith expressed it, outside the court, it was like "asking the President of a Bar Association to indulge in ambulance-chasing, or a policeman to agree to a burglary." Again, unsupported evidence is liable to be balanced numerically; the testimony of two witnesses on one side may be more acceptable than that of one on the other side. Moreover, it is almost impossible to reconcile different memories of verbal interviews six months old.

The purpose of this article is not only to emphasize the viciousness of the prevalent idea that "free sketches" are available from architects—an evil perhaps as old as the profession —but also to urge greater efforts toward uniting the profession in a stand against this practice and its stablemate, fee-cutting; and meanwhile, to advise the individual to protect himself so that he can secure at least a nominal compensation for his work. Otherwise, there is nothing to prevent a person from going to one architect after another, accumulating advice and suggestions and information gratis, until finally, and presumably for the lowest fee obtainable, an architect (or contractor) is employed to assemble all the results of this experience.

To say this is inequitable, does not meet the situation. The only practical recourse is for the entire profession to unite in refusing to perform any services without reasonable compensation. Perhaps what the profession really needs is an architectural St. John L. Lewis.

SUMMARY OF FEDERAL HOUSING ACT OF 1937

By the Housing Legislation Information Office, Washington, D. C.

(1) Purpose: A long-term, permanent program of Federal aid to state and local governments and agencies for the provision of decent housing for families of lowest income and for slum clearance.

(2) Creates a permanent United States Housing Authority within the Department of the Interior. The powers of the Authority are vested in an Administrator, appointed for five years by the President with the consent of the Senate. The President may transfer existing housing projects to the Authority.

(3) Occupancy of all projects is strictly limited to lowest income families which are not being adequately housed by private building and whose income is less than five times the rent (including utilities), or six times the rent for families with three or more children.

(4) Loans may be made to local public housing agencies for the financing of low-rent housing projects constructed by them. These loans are limited to 90 per cent of the cost of projects when annual contributions or capital grants are made. All loans bear interest at not less than the cost of money to the Federal Government plus 1/2 of one per cent, and must be repaid in not more than 60 years.

(5) Bonds guaranteed by the United States may be issued by the Authority to raise funds for these loans in the following amounts: On and after July 1, 1937, $100,000,000; on and after July 1, 1938, $200,000,000; and on and after July 1, 1939, $200,000,000. These bond issues together with interest will be repaid from the proceeds of loans on projects.

(6) Annual contributions may be made to local public housing authorities on projects developed by them. Annual grants are limited to amounts necessary to achieve low rents, but in no case may exceed the yield at Federal going rate of interest plus one per cent on the cost of projects. Annual grants will be contracted for in advance to run for not more than sixty years; if made for twenty years or more the amount is subject to revision after ten years, and every five years thereafter. During the next three years contracts may be entered into providing for contributions up to a total of $20,000,000 per year, without further authorization from Congress.

(7) Capital grants may be made to local Public Housing Authorities as an alternative to annual grants. Capital grants are limited to 25 per cent of the cost of the project payable from the funds of the Authority, plus an additional 15 per cent which the President may allocate from relief funds for the payment of labor. Capital grants from the funds of the Authority are limited to a total of $30,000,000 without further authorization from Congress.

(8) Local contributions are required in connection with all projects on which the Authority makes annual contributions or capital grants. In the case of annual contributions a local government must contribute at least 20 per cent of the annual contribution either in cash or tax remissions or exemptions. In the case of capital grants a local government must contribute at least 20 per cent of the project cost either in cash, land, or the capitalized value of community facilities, services, or tax remissions or exemptions.

(9) Slum clearance is required whenever annual contributions or capital grants are made. Provision satisfactory to the Authority must be made for the elimination of slum dwellings equal in number to those in the new project, but this elimination may be deferred in the case of a low-rent housing shortage so acute as to force dangerous overcrowding.

(10) Cost of dwellings (exclusive of land and non-dwelling facilities) is limited to $1,000 per room and $4,000 per unit in cities of less than 500,000, and $1,250 per room and $5,000 per unit in cities of over 500,000. Furthermore the average cost of dwellings in any project may not exceed the average cost of dwellings currently produced by private enterprise in the same locality, under the building requirements applicable to the proposed site and under labor standards not lower than those of the Act.

(11) Limitation of expenditure is made so that no State may receive more than 10 per cent of the funds provided.

(12) Protection of low-rent character of projects is definitely secured; and labor is assured of fair wages and standard working conditions.

(13) Appropriation of $26,000,000, available until expended, is authorized for operating expenses and the payment of annual grants.

(14) No provision is made for loans to limited profit housing agencies, nor is there any authorization for the further construction of demonstration projects by the central Authority.

Program . . . 1937 Convention

State Association of California Architects

Hotel El Canto, Santa Barbara
October 14, 15 and 16, 1937

THURSDAY, OCTOBER 14

Registration of Delegates—Informal Reception.

6:30 P. M.—Song, laughter and cocktails.

7:30 P. M.—Informal dinner at hotel.

7:30 P. M.—Northern and Southern Section Executive Boards annual joint meeting.

FRIDAY, OCTOBER 15

10:00 A. M.—Convention called to order, President L. H. Hibbard, Los Angeles, presiding. Address of welcome. Review of the year—L. H. Hibbard, President. Reports of officers and committees.

12:30 P. M.—Informal barbecue in hotel garden.

2:00 P. M.—Afternoon session, Geo. D. Riddle, Vice President Southern Section, presiding. Continuation of reports of committees.

3:00 P. M.—Business and Open Forum, Harry M. Michelson, Vice President Northern Section, San Francisco, presiding.

TOPICS FOR DISCUSSION:

(A) Shall the State Association endorse a Building Code;

(B) The Future of State Legislation;

(C) Unification. The State Association and the one-day convention in conjunction with the convention of the American Institute of Architects;

(D) Low rent housing and slum clearance—the Wagner-Steagell Bill and how it affects California;

(E) The Architects interest in the present labor situation;

(F) The Future of the Construction Industry.

4:00 P. M.—For the ladies. Special entertainment and tea in the hotel garden.

6:00 P. M.—Song, laughter and cocktails again.

7:30 P. M.—Banquet in the hotel dining room, Winsor Soule presiding. The speakers and entertainment will be announced later. The ladies will be present.

SATURDAY, OCTOBER 16

10:00 A. M.—Mr. Harry J. Devine, President of the Northern Section, presiding. Announcements. Report of Committee on Resolutions. Unfinished business. Adjournment. Immediately upon adjournment of the Convention, the Northern and Southern Executive Boards will meet separately for the election of officers for the ensuing term.

10:00 A. M.—Producers Council Clubs of California will hold Annual Conference.

12:00 M.—Luncheon; Winsor Soule, president. Music and entertainment. The ladies will be present.

Afternoon—A golf tournament for the delegates. Sightseeing trips and entertainment for non-participants. Fine estates; new architectural highlights.

6:30 P. M.—Sports dinner at the La Cumbre Golf and Country Club, Eric Barnett, President of the Producers' Council Club of Southern California, presiding. The ladies will be present, fun will prevail.

ARCHITECTS' BULLETIN

Issued For

THE STATE ASSOCIATION OF CALIFORNIA ARCHITECTS

Northern Section

STATE ASSOCIATION MEMBER
OF THE
AMERICAN INSTITUTE OF ARCHITECTS

Editor
Harris C. Allen

Address all communications for publication in the Bulletin to the Editor (Harris C. Allen) 557 Market Street, Room 218, San Francisco, California.

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1937 CONVENTION

THE convention program, published on the opposite page, is alluring, promising, informative. Specific data, such as hotel rates—which were very reasonable on the last occasion—will be sent to all members later. All of us who went to the Convention at Santa Barbara in 1935 can testify that El Encanto Hotel is a very convenient and pleasant place for such a gathering, with its large garden cottages and main pavilion perched on the hill near the old Mission, overlooking the city and the sea.

The general convention chairman is Winsor Soule (famed for his choir-leading capabilities) assisted by Ralph Flewelling and the following sub-chairmen:

Registration and Credentials, Henry W. Howell.
Resolutions, John Frederic Murphy.
Publicity, Leonard A. Cooke.
Program, Louis N. Crawford.
Entertainment, Lutah Maria Riggs.
Golf Tournament, Francis Boyd.
Ways and Means, E. Keith Lockard.
Ladies' Entertainment, Mrs. Henry W. Howell.

The co-ordinating committee for the Northern Section consists of:

Edward O. Blodgett, Gwynn Officer, Chester Root, Rafael Lake, Dole Ford Thomson, Edward R. French, Jr., Edward Flanders, Eric Johnson, Carl Frederick Gromme, Leo J. Sharps, Harris C. Allen, Chairman.

Aside from such business as well regularly be presented by the Executive Board in its report, the subjects down for Forum discussion will certainly entail some Convention action, and of course you never can tell what special resolutions may be proposed by delegates! Throat lozenges, sedatives and stimulants can be secured on the premises.

The Producers' Council Clubs of California will hold their usual Conference during Association sessions, and their usual contests with us on the links, Saturday afternoon, followed by their usual condolences or congratulations, as the cases may be, at the golf dinner and hi-jinks on Saturday evening. And it is rumored that the usual tokens of good will are to be distributed to those architectural golfers who surmount their usual handicaps—and perhaps to those who specialize in parlor golfing (vide Abe Appleton).

NORTHERN SECTION MEETING

On September 17, the annual Advisory Council and Pre-Convention Section meeting was held in San Francisco. After considerable balloting, the Advisors elected to the Executive Board for next year Otto G. Hintermann (Fiscal authority extraordinary), of San Francisco, and Gwynn Officer of Berkeley.

President Harry Devine made an outline report of the year's activities, emphasizing the need of unremitting vigilance in legislative matters, with sufficient expert advice to keep in touch with items in various bills coming up

at sessions of the State Legislature, which affect the building construction industry.

Harry Michelsen reported on the friendly relations established with other branches of the industry, the Producers' Council and the Building Industry Conference Board, and on the question of private architects' participation in State work.

Harris Allen reported on activities of the Board of Control and on the possible extension of a national Report Service to this region; and after discussion a resolution was proposed by George Simonds and unanimously carried, to the effect that all members should be expected to write the Dodge Report Service, Sweet's Catalog and the Architectural Record, if so requested by the Executive Board, expressing firm opposition to the entrance of any new report service into the California field, and urging similar action at the Convention next month.

William Garren proposed a resolution which after general discussion and some amendment was unanimously carried, as follows:

"The State Association of California Architects, Northern Section, in its meeting in San Francisco, September 17, 1937, gave serious consideration to the existing labor disagreements, specifically in regard to plasterers and hodcarriers, and unanimously passed the following resolutions upon both present and future labor controversies in the building industry.

"1. We believe in the principle that labor organizations, and in this case plasterers and hodcarriers, are justified in their desire to secure a living wage with reasonable permanence and continuity.

"2. We believe that the uncertainty aroused by labor strife and strikes has caused a false rise in building costs which the public is not willing to pay, and that work is being curtailed through lack of public confidence and fear of work stoppage.

"3. We advocate that, in order to restore public confidence and renew building activities, the plasterers' claims be given careful consideration and that they and all crafts should immediately then agree to the principle of arbitration on all future wage adjustments."

We are inclined, in this connection, to reprint part of an article written some years ago in a similar situation. To wit: "Architects should not, and in reality they cannot, remain neutral on such a subject. It affects them too vitally as individuals, whose livelihood depends upon a healthy condition in the building industry; it concerns them too deeply in a broader way, as members of a profession committed to a code of ethics based upon justice, fair play, and the sanctity of contracts; and as citizens who have received unconditional opportunities for training and practice, they are bound to uphold the inalienable right of every American to obtain a living by his own efforts. . . . Every architect knows how he stands on these points. There is no real question in his mind. All architects object to craftsmen being underpaid or overworked, for buildings cannot be well constructed under such conditions; there must be loyal cooperation, with a square deal for all concerned, to achieve our ideal. . . . Public opinion always forces government, sooner or later, to control such situations. Architects, with their fuller knowledge of facts, should anticipate public opinion. . . . They should enforce their principles in their private practice so far as is in their control. . . ."

THE BUSINESS SIDE

In the line of reviewing old bits of advice, let us also reprint part of an article by Edwin Bergstrom, that apostle of efficiency, written in 1924.

"It has been shown:

"That architecture must be conducted as a business, and therefore it must be organized to do business.

"That the success of a business depends upon the service rendered.

"That service rendered depends upon the organization of business.

"That the welfare of the organization depends upon its management.

"That successful management means the administering of each department of the organization with exact knowledge combined with ideals of service, integrity, common sense and diligence.

"That successful management places responsibility upon competent individuals, holds them resopnsible for results, and adequately compensates them therefor, at the same time co-ordinating the work of these individuals.

"That successful management requires clearly stated instructions and documents, each always committed to writing, with their delivery and receipt clearly accounted for and acknowledged, leaving nothing to remembrance and chance.

"That it requires promptness of decision with nothing put off from day to day.

"That it requires accuracy in every function.

"That successful management assumes full responsibility for its actions without equivocation or evasion, and demands equal consideration from those with whom it deals.

"That successful management knows the detailed cost of every service given by it and of those things with and in which it deals, and by constant and repeated regular analysis of these costs and the services rendered, produces these services at the minimum costs.

'That management is an art, always a matter of personality; organization is merely the machinery which the personality uses to accomplish the art.

"Regardless of the size of his plant, let every architect take these thoughts with him. If he will put down on paper a plan of doing his work, his idea of the organization of his forces, working from the broad functions down to the finest detail, systematizing every effort of his practice, and will compare and discuss this plan with his fellows who have made similar surveys of

their practice; if he will fearlessly analyze the quality and quantity of service he is giving and compare them with the most complete service he can imagine the architectural profession should give; if he will analyze his costs of giving these services; if he will budget his income and schedule his own and the time to be spent upon the various portions of the work; if he will reduce every order and instruction to writing and confirm every verbal understanding in the same manner; if he will not start any job until he has made a clear contract with his client definitely stating his own duties, the owner's duties, the compensation to be paid to him with the methods and times of payment of same, clearly providing for all contingencies of termination of contract or work and covering all relations to other interests on the work; and, finally, if he will conclude to conduct his business strictly within these lines, he will have established in his business the essentials of good managership and will have taken the great step to put himself in the path that leads to Success and that will raise the practice of architecture in the public esteem."

MORE BUSINESS

There are always many of us who think we have paid our small annual subscription to the Association, but who have neglected it in the daily rush of affairs. Our Treasurer (and through him, our joint interests) would like to have all those to whom this applies, remedy it with a $5.00 check, before the Convention when we report to the whole State how many of us have made good.

SOUTHERN CALIFORNIA CHAPTER

At the September meeting of Southern California Chapter, A. I. A., members enjoyed a visit to the classes of the Art Center School in Los Angeles. Edward A. Adams, director of the school, explained the premises on which the school operates and described a series of photographs taken by himself and an assistant at the Paris Exposition.

Mr. Adams introduced members of the school staff, including Lionel Banks, Albert King, Stanley Reckless, Barse Miller, Jack Martin Smith and Kem Weber. Mr. Weber, an industrial designer, explained the provinces of his profession.

Henry F. Withey introduced Howard G. Elwell, George J. Lind and Alfred T. Gilman, new associate members of the Chapter, and presented to William H. Harrison his certificate of membership in the Institute.

Reports on professional betterment and housing legislation were made by Herbert J. Powell and Eugene Weston, Jr., respectively. An announcement of campaign plans of the Community Chest were made by John Leslie Goddard.

Ralph Flewelling, who presided at the meeting, called attention to that section of the last bulletin dealing with the Chapter-sponsored honor awards competition for the best houses designed during 1937, from which 41 entries were selected.

WASHINGTON STATE CHAPTER

Seattle residences by Architects William J. Bain, J. Lister Holmes, John T. Jacobsen, Edwin J. Ivey and George Wellington Stoddard were inspected by members of the Washington State Chapter, A. I. A., on Saturday afternoon, September 11, as the main feature of the September monthly meeting.

The regular business meeting of the Chapter followed dinner at the Gowman Hotel. Mr. Herrman submitted proposals of the Seattle Chapter, A. G. C. of A. for agreement between that organization and the Institute Chapter relative to standard practice in calling for bids, letting of subcontracts, alternates, unit prices, and other matters relating to the award of contracts.

New active members elected to the Institute include three former associates, Alban A. Shay, Victor N. J. Jones and Henry J. Olschewsky, all of Seattle. Mr. Shay is in partnership with Paul Thiry, Skinner Building. Mr. Jones is a member of the firm of McClelland and Jones, Republic Building. Mr. Olschewsky is a member of the faculty, School of Architecture, U. of W. New associate members are: Edwin Turner and Robert L. Durham.

OREGON CHAPTER

Oregon Chapter held its first meeting Tuesday, Sept., 21. President Howell, Secretary Schneider and other architects on the Chapter board are so busy getting out plans for PWA projects that little thought has been given to a program for season activities.

COMPETITION

To produce an improved design for elevated vehicular highways that will better conform to the architectural requirements of city streets, the American Institute of Steel Construction has announced a national competition. The plans for this competition were disclosed by Clyde G. Conley, President of the Institute, at a special dinner meeting, September 21, at the Waldorf-Astoria Hotel, New York.

The competition will be open to all architects, engineers and others interested throughout the United States. For the best design a cash prize of $5,000 will be paid. There will be a second prize of $2,000, a third prize of $1,000 and ten prizes of $100 each. Only employees of the American Institute of Steel Construction may not compete.

The competition will close March 31, 1938. A jury to select the prizewinning designs will consist of Harland Bartholomew, City Planner of St. Louis; Col. Willard T. Chevalier, President of the American Road Builders Association; Paul P. Cret, Architect of Philadelphia; Loran D. Gayton, City Engineer of Chicago; Paul G. Hoffman, President of the Studebaker Corporation; Albert Kahn, Architect of Detroit, and C. M. Pinckney, City Engineer of New York.

Attorney General Clarifies New Regulations for Architectural Examiners

CLARIFYING several points in proposed changes in rules governing activities of the State Board of Architectural Examiners, Attorney General U. S. Webb recently handed down an important opinion in response to a request for information from Stanley G. Wilson, secretary of the Board's Southern District.

The text of the attorney general's opinion follows:

Dear Sir:

I have before me your letter of August 2, 1937, wherein you enclose certain proposed rules and regulations relative to the authority of the Board to reprimand architects and to suspend or revoke licenses.

Proposed Rules

You ask to be advised whether these proposed rules may be adopted by the State Board of Architectural Examiners and by so doing not be inconsistent with the act regulating the practice of architecture (Chapter 212, Statutes 1901, as amended; Deerings Act No. 486).

Section 3 of the act provides that "the state board may adopt rules and regulations to govern its proceedings, not inconsistent with this act."

Further on the same section provides:

"Within thirty days after the date of its appointment, the state board shall meet to organize, elect officers as in the act provided, and to formulate and adopt a code of rules and regulations for its government in the examination of applicants for certificates to practice architecture in this state; and such other rules and regulations as may be necessary and proper, not inconsistent with this act."

Section 8 of the act sets forth the grounds for suspension and revocation of certificates and reads in part as follows:

Grounds for Suspension

"A provisional certificate issued by the district board, or a certificate issued by the state board, may be suspended for a period not exceeding one year or revoked for dishonest practice, for deception resorted to in obtaining a certificate, for a failure of recordation, for a failure to pay the annual license fee prior to the deliquency date, for gross incompetency in the practice of architecture, or for any violation of the provisions of this act, which shall be determined solely by the board of the district in which the person, whose certificate is called in question, is residing or is doing business; and upon full investigation of the charges by the district board, reasonable opportunity having been given to the accused to be heard in his own defense or by counsel."

Inasmuch as the act sets forth the specific grounds upon which certificates may be revoked it is our opinion that the board may not add additional or different grounds by adopting rules and regulations designed to accomplish that end. Such rules and regulations would in our opinion be inconsistent with the act. Some of the proposed rules and regulations forwarded by you are not inconsistent with the act and those may, of course, be properly adopted as a part of the Rules and Regulations of the State Board.

Only After Hearing

Before discussing these proposed rules individually may we point out that as set forth they are gramatically incorrect. The act authorizes the board to suspend or revoke certificates only after a hearing or at least after a reasonable opportunity has been given the accused to be heard in his own defense or by counsel. The board is not authorized to reprimand without a hearing. However, a reprimand is a lesser punishment than suspension or revocation and since the greater contains the less (Civil Code 3536) the board undoubtedly has the power to reprimand if ground therefore is, after a hearing, found to exist.

If any of the proposed rules and regulations are to be adopted we would suggest that the opening paragraph be made to read somewhat as follows:

"The board shall be empowered to reprimand an architect or suspend or revoke the certificate of an architect if, after a reasonable opportunity to be heard, the board finds: (a) That, etc."

We then take up the proposed rules:

(a) Said architect is practicing in violation of this act and rules governing its provisions.

No Provisions

There is no provision in the act whereby a violation of the rules is made a ground for suspension or revocation. That part of rule (a) should therefore be omitted. The remainder is covered by Section 8 and may properly be included in the rules and regulations.

(b) That such certificate has been obtained by fraud or misrepresentation.

This is also covered by Section 8 and may be included.

(c) That the holder of such certicate is falsely impersonating an architect or former achitect of a like or similar name.

Dishonest Practice

This, in our opinion, would constitute "dishonest practice" and may be included.

(d) That the holder of such certificate has aided or abetted in the practice of architecture any person not authorized to practice architecture under the provisions of this act.

This too would constitute "dishonest practice" and may therefore be properly included.

(e) That the holder of such certificate has been guilty of a felony.

The act does not authorize this and it should be omitted.

(f) That the holder of such certificate has been guilty of deceit or negligence or misconduct or dishonesty in the practice of architecture.

"Negligence" and "misconduct" are not made grounds for suspension or revocation in the act. We would suggest that these words be omitted and the words "gross incompetency" be inserted in lieu thereof.

Guilty of Incompetency

(g) That the holder of such certificate has been guilty of incompetency or recklessness in the construction or design of buildings.

"Recklessness" and "carelessness" are not included in the act. If our suggestion is followed "incompetency" will be covered by (f) and (g) and may therefore be omitted entirely.

(h) That the holder of such certificate has affixed his signature to plans, drawings, specifications or other instruments of service which have not been prepared by him or in his office or under his immediate responsible direction, or has permitted his name to be used for the purpose of assisting any person not an architect in enacting the provisions of this act.

This would constitute "dishonest practice" and may be included.

(i) That the holder of such certicate has been adjudged mentally incompetent by a court of competent jurisdiction.

Not Authorized

It is doubtful that this is authorized by the act. A person might be adjudged mentally incompetent and still be qualified. Thus the courts have held that a person who has been adjudged mentally incompetent may be a witness at a trial. Whether a person

With the Architects

MASTEN, HURD & ROETH BUSY

Masten, Hurd & Roeth, 442 Post Street, San Francisco, are the architects of a one story modern store building to be built in West Portal Avenue, San Francisco, for Jules Bernheim. Structure will be 50x100' and will have a vitrolite and plate glass front. The same architects are working on plans for a grammar school building, at Tahoe City, and alterations to the Orinda Country Clubhouse.

WOODLAND RESIDENCE

Dr. E. K. Copeland, 211 Cleveland Street, Woodland, will build a seven-room $12,000 house at Woodland, from plans by Architects Dragon & Schmidts, 2069 Allston Way, Berkeley. The same architects have taken bids for the construction of a $7,000 residence at Woodland for Jessie M. Vickery.

TO REMODEL COURT HOUSE

Some remodeling will be done to the County Court House at Stockton, the work to include new rest rooms in the basement. Eric Johnson, 41 South Sutter Street, Stockton, is the architect. Mr. Johnson also has plans on the boards for a 6-room $5,000 house in Stockton.

COUNTY HOSPITAL BUILDINGS

A nurses' dormitory and detention home and an addition to the laundry is planned by the Supervisors of Marin County. The work, estimated to cost $30,000, will be done by contract from plans by Norman W. Sexton, de Young Building, San Francisco.

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is incompetent with reference to a particular task or calling would depend upon the facts available at the time the question arose. If an occasion where such a rule could be invoked should arise a hearing could be held to determine whether the person involved was grossly incompetent and if found to be so his certificate could be revoked or suspended under the "gross incompetency" provisions of the act or rules. We would suggest, therefore, that said proposed rule be omitted.

(j) Any architect who forms a bona fide partnership with one who is not an architect, shall first notify the Board in writing, setting forth the name or names of the members of said partnership, and shall receive an acknowledgement of same in writing; and upon dissolution of said partnership, the Board shall likewise be notified. Failure to notify the Board in writing shall be prima facie evidence that no partnership exists.

This should be a separate rule or regulation and we would suggest that it be made to read somewhat as follows:

Any architect who forms a bona fide partnership with one who is not an architect, shall first notify the Board in writing, setting forth the name or names of the members of said partnership, and shall receive an acknowledgement of same in writing; and upon dissolution of said partnership, the Board shall likewise be notified.

Failure to notify the Board in writing of the formation of a partnership shall be prima facie evidence that no partnership exists. Likewise failure to notify the Board in writing of the dissolution of the partnership shall be prima facie evidence that the partnership still exists.

Very truly yours, U. S. WEBB, Attorney General

ARCHITECT FOR U. S. BUILDING

Appointment of an architect to design the United States Building at the New York World's Fair in 1939 has been announced by Theodore T. Hayes, Executive Commissioner of the Federal Commission to the Fair. The architect is Howard L. Cheney consultant to the Public Building Branch of the Procurement Division of the U. S. Treasury in Washington.

As yet there has been no determination of the character of the United States Building nor of its architectural details. It is intended, however, to be one of the most distinguished structures in the Exposition grounds and of a dignity of design which will make it a great architectural contribution to the Fair.

HARRY H. JAMES, ARCHITECT

Harry H. James, 69, architect of Seattle, and former member of the Washington State Board of Architectural Examiners, died August 29, at the Virginia Mason Hospital, Seattle, following an illness of three weeks. Not long after his arrival in 1888, Seattle was devastated by the great fire of June 6, 1889 and Mr. James took an active part in the reconstruction of the city.

Mr. James is survived by his widow, Mrs. Anna James, 1806 Harvard Avenue; a daughter, Mrs. Edna Beall, and a son, Harold James, both of Seattle; two brothers, Edwin F. and George P. James, Seattle, and a sister, Mrs. W. R. Kelsey, New York City.

IDAHO ARCHITECTS BUSY

Four public building projects totaling $618,660 in value for which applications for Federal funds had been made on plans prepared in the office of Tourtellotte and Hummel, architects, Easton Building, Boise, Idaho, have been approved by the Public Works Administration. The most important item is for the proposed new Ada County courthouse. On this project Wayland and Fennell, Boise, are associate architects. The other Tourtellotte and Hummel retainers are for an Idaho state tuberculosis hospital, a school at Marsing, and municipal swimming pool at Weiser.

EL CERRITO THEATER

From plans by Norman R. Coulter, of San Francisco, a $50,000 theater will be built at El Cerrito, Contra Costa County, for the El Cerrito Theater, Inc., 25 Taylor Street, San Francisco. Structure will be of reinforced concrete and will have a seating capacity of 800.

LIBRARY BUILDING

Preliminary plans are in progress in the office of Whitehouse & Church, Railway Exchange Bldg., Portland, for a reinforced concrete, granite and marble State Library building at Salem, Oregon, to cost $1,000,000. A PWA grant has been approved.

WOMEN ARCHITECTS

The average woman's tendency to go around thinking "I am a woman!" is her biggest handicap professionally.

"In other words—the tendency to expect a little preference—like being helped on a street car," said Mrs. Verna Cook Salomonsky, of Scarsdale, N. Y., who has her own architect's office and has designed more than 100 country houses.

Asked how it feels to be the only woman member of New York's Architectural League, Mrs. Salomonsky, who holds that title, said, "I never think of it! The question is, can I build a house?

"There is nothing more fatal for a woman in a man's field than to go around thinking, 'I am a woman,' " she declared. "That is profesional suicide."

Discussing women in architecture, Mrs. Salomonsky said: 'The reason comparatively few are top-notchers is that it's fearfully hard work. Sometimes you work for two or three days or nights without stopping.

"I think only women with super-vitality can stand it."

Mrs. Salomonsky was the first architect to do a house with a red door, in Scarsdale, N. Y. Since she built it, red doors have broken out like a rash.

SCHOOL OF DESIGN

Announcement is made of the establishment of a graduate school of design, located in historic Carmelita Garden at the corner of West Colorado Street and Orange Grove Avenue, Pasadena. It recognizes design as a vital force in all activities of American life today; commercial and industrial, as well as the purely aesthetic. A thorough study of the needs and possibilities has been made during the past year under the general guidance of Dr. Royal Bailey Farnum, Director of the Rhode Island School of Design. The new institution is to begin its active program of instruction during the academic year 1937-1938.

FUNDS APPROVED FOR SCHOOLS

Applications for Federal funds to aid in the construction of 12 school buildings to cost about $647,572, have been approved by the Public Works Administration on plans prepared in the office of Architect C. N. Freeman, Concord Building, Portland, Ore. This is the greatest number and highest value of school building projects to be approved for any architectural office in the Pacific Northwest. Eight of these are located in Oregon at Harrisburg, Blachly, Jefferson, Coquille, Dundee and Sherwood, and four in Washington at Toutle Lake, Kalama, LaCenter and Rosburg.

SAN FRANCISCO STORE REMODEL

Blum's Confectionery, California & Polk Streets, San Francisco, will be extensively modernized from drawings by Architect Douglas D. Stone, 381 Bush Street, San Francisco.

HILLSBOROUGH RESIDENCE

Gardner A. Dailey, 210 Post Street, San Francisco, has completed plans for an eight room residence in Hillsborough for Mr. Hendrickson.

BERKELEY SHOP BUILDING

Berkeley High School will have new shop buildings costing $150,000, from plans by Architect Will G. Corlett and Henry H. Gutterson, Associated. They will be built on the site of the present high school group at Milvia and Kittredge Streets, Berkeley. In Mr. Corlett's office, plans have been finished for remodeling the offices of the Alameda County Labor Temple in Oakland.

SAN FRANCISCO APARTMENTS

H. C. Baumann, 251 Kearny Street, San Francisco, has completed working drawings for a 3-story frame apartment house to contain eighteen 3 & 4 room apartments and to be built on the northeast corner of Golden Gate Avenue and Annapolis Street, San Francisco, for John Murphy, 350 Claremont Boulevard, San Francisco. There will be built-in-wall beds, electric refrigeration, steam heat, etc.

$600,000 JUNIOR COLLEGE GROUP

The first unit to a group of Junior College buildings for the San Mateo Junior College District, consisting of a $240,000 Science Building, is to be built this fall at Delaware & Peninsula Avenues, San Mateo, from plans by Architect Harry A. Thomsen, 315 Montgomery Street, San Francisco. The building will be of reinforced concrete.

$40,000 SAN JOSE RESIDENCE

Preliminary drawings are being prepared by Ralph Wyckoff of San Jose for a 14-room California farmhouse style residence for a client in the western part of Santa Clara County. The owner will spend $40,000 on the house which will have stucco exterior, tile shingle roof and oil burning heat.

$70,000 APARTMENT BUILDING

A frame and stucco apartment house of 3 stories and basement will be erected immediately on the northeast corner of 27th Avenue and Fulton Street, San Francisco. Joseph Schultz, 123-3rd Street, San Francisco, is the owner and R. R. Irvine, 2048 Market Street, San Francisco, is the architect.

SAN JOSE ARCHITECTS BUSY

New work in the office of W. L. Higgins & Chester Root, 19 North 2nd Street, San Jose, includes alterations to the residence of Mrs. Anna Higgins in Santa Clara and a six-room dwelling in Hayward for E. Swaim.

BUS TERMINAL

Portland, Oregon, is to have a new bus terminal costing $250,000 for patrons of the Pacific Greyhound Line. W. D. Peugh of San Francisco, and Knighton & Howell, Portland, are the architects.

BURLINGAME RESIDENCE

Harold G. Stoner has completed plans for a $5,000 residence in Burlingame for E. S. Shaver of 1204 Edgehill Drive, Burlingame.

JAPAN INVADES U. S.

While Japan is making bellicose inroads into Chinese territory she is also invading the United States in a fashion purely cultural and peaceful, but none the less dynamic, according to Robert A. Murray, A. I. A., lecturer in architecture for the University of California Extension Division in Los Angeles.

In this country our early architecture was based on the 'Stone Proportion,' which was influenced by the size and limitations of stones available. When the use of steel in buildings taught us that we could safely span wide openings we became conscious of the fact that possibly another type of proportion other than our vertical doctrine might also be usable, and we could do the same thing with wood. The exponents of modern architecture can make profitable use of the grace, harmonious symmetry and well-balanced color combinations of the Orient and are already making strides in that direction. We probably won't go so far as to sit on the floor and drink tea . . . but we have already gone as far as bamboo fences, Japanese gardens and a few decidedly Japanese house-tricks," the Los Angeles architect points out.

Murray recently returned from Washington, D.C., where he was engaged in Federal Housing Administration work.

PERSONAL

Philip A. Moore, architectural draftsman, 1102 9th Avenue, Seattle, passed the Washington State examination for architect's license at the June session of the examining board. He is now employed in the studio of J. Lister Holmes, A. I. A.

William L. Painter, member of **Graham** and **Painter,** architects and engineers of Seattle and Shanghai, is now serving in the U. S. Marine Corps Reserve on duty in the International Settlement of the war-stricken metropolis of China. Cessation of all business has compelled Mr. Painter to close his office at 668 Szechuan Road.

Mayor Rossi of San Francisco has appointed **Ruth Cravath Wakefield** to succeed **Edgar Walter,** retired, as the new member of the Art Commission of San Francisco. The appointee is a sculptor, recognized for her ability and sound judgment.

First prize in a nation-wide competition for the design of a residence of six rooms, conducted by the "House and Garden" magazine, was recently awarded to **Frank C. Stanton,** Bellingham architect.

TWO SMALL DWELLINGS

Plans have been completed in the office of W. W. Wurster, Newhall Building, San Francisco, for a six-room house for Dr. Aird in Twin Peaks District, San Francisco, and a house in the same locality for Dr. Gurchot.

PLASTERERS RECEIVE INCREASE

A signed employer employee agreement ended the dispute which for the past two months has tied up all plastering, lathing and hod carrying in Alameda County, California.

Employers granted a 10-cent an-hour raise to workers in each of the three unions involved. The unions stipulated that in the event of failure to agree in any subsequent dispute, arbitration will be taken and work continued in the interim.

The agreement was announced by S. G. Johnson president of the Associated General Contractors and Builders of the East Bay: William Makin president of the Plastering Contractors' Association of Alameda County, and Henry Weisenhaus, president of the East Bay Lathing Contractors' Association.

The agreement runs to May 1, 1938.

ENGINEERS VISIT CHEMICAL PLANT

San Francisco Engineers on September 25th made an inspection trip to the plant of the Great Western Electro-Chemical Company, Pittsburg, California.

The plant is located at the east end of Antioch Road. Members were taken through the factory in small groups with guides to explain features of interest.

This is the largest electro-chemical manufacturing plant in the west and the inspection emphasized the manufacture of those chemicals used in water and sewage treatment, such as chlorine, ammonia, ferric chloride, etc.

Through the courtesy of C. W. Schedler, vice-president in charge of operations, those making the trip were guests of the company at luncheon following the inspection.

APARTMENTS AND RESIDENCE

Early American style architecture has been adopted for a combination apartment house and residence in Watsonville for W. E. Davis of that city. The owner will spend $40,000.

MODESTO OFFICE BUILDING

Architect G. N. Hilburn of Modesto is preparing plans for a $15,000 one-story reinforced concrete building in Modesto for the Grange Company.

ROSEVILLE RESIDENCE

At Roseville, Placer County, Dr. Lucas Empey will build a $12,000 two-story frame and stucco residence from plans by Architect Herbert Goodpastor, Mitau Building, Sacramento.

COLUSA RESIDENCE

J. S. Gould, 251 Kearny Street, San Francisco, has completed plans for a two-story frame and stucco residence in Colusa for an unnamed client.

PASSING OF THE GRAND MANSION

In New York during the past twenty years most of the fine mansions built by wealthy citizens have been wrecked to make way for large apartments. A notable exception is the Charles M. Schwab marble palace on Riverside Drive, which has been surrounded by skyscrapers.

Recently the apartment of the late Arthur Brisbane has been offered for rent, whole or divided. It is one of the most pretentious ever built in New York. The noted editor built from the fifteenth story up and occupied for his New York residence three stories, most elaborately designed and executed. The entrance is from Fifth Avenue, into a reception hall 20 by 40 feet, with a fireplace at one end. A private elevator runs to the fifteenth floor, opening into a Spanish type hall, then into a living room 20 by 60, two stories high. Murals depict the history of civilization, Egyptian, Greek, Roman, Medieval and down to modern times. A library and den at one end are balanced by a large dining room at the other. There are all together thirty-two rooms, and a wide stairway leads to the roof where there is a penthouse and solarium.

No mansions such as these are now being built, and it is doubtful if any more will be. There are a number of reasons for this. The trend of the times has changed the methods of living; and few people, even though wealthy, are willing to shoulder the burden of such a big house with our ever increasing taxes.

Formerly Fifth Avenue in New York was lined with these fine mansions, such as those of John Jacob Astor, Senator Clarke, the Vanderbilts and the Dukes.

The automobile has had a tremendous effect in affording greater freedom, so that people of large means find it more to their liking to divide their time between city and country. Further, there has been a reduction in the size of the American family. Today the average family consists of a man, his wife and two children, and to such a family the maintenance of a large mansion would mean "a boarding house for servants."

The large pretentious house has been replaced by one of compactness, where modern appliances make living easy and few servants, if any, necessary.—Bulletin, Michigan Society of Architects.

COAL PLANT WINS BEAUTY PRIZE

Architectural beauty may be attained in industrial and other buildings with a purely utilitarian purpose, according to the American Institute of Architects, which points out that a coal preparation plant was adjudged England's best building of 1936. The structure chosen for first honors was the Rising Sun colliery at Wallsend, Northumberland.

"The realm of architecture has been extended to include colliery buildings," according to a statement in "The Architects' Journal" by Dr. C. H. Reilly, Professor Emeritus in the University of Liverpool, announcing the award.

"We solemnly announce that the Wallsend colliery structure, white and clean and carefully arranged by Professor R. A. Cordingley of Manchester University, to express its function and do its work well and economically, is the best building of 1936—cathedrals, churches, hospitals, cinemas, schools, blocks of flats and country houses, King's or otherwise, notwithstanding.

"This result, reached with great deliberation, is a very useful one if we could only make the world accept it, for the meaning is that all buildings can be architecture however few are. Who could have imagined it possible to apply such ephithets as 'imposing, balanced and dignified' to the colliery buildings by Professor Cordingley? They are true, nevertheless, and they represent, I think, the great architectural conquest this age has made."

$12,000 ORINDA HOUSE

Orton Lucas will spend $12,500 on a new house in the Country Club Estate, Orinda, from plans by Architect Fred Confer, who has also made plans for a $11,000 house in the same locality for S. F. Ulrich.

VISALIA HOTEL IMPROVEMENTS

Preliminary drawings are in progress for remodeling the Johnson Hotel in Visalia, the work to include coffee shop, cocktail lounge, dining room, new elevators, etc.

$25,000 ATHERTON RESIDENCE

Architect E. J. Osborne, 251 Kearny Street, San Francisco, has taken preliminary bids for a $25,000 house to be built in Atherton for an unnamed client.

GUEST HOUSE

Near Healdsburg, Sonoma County, Walbridge Land will build a $12,000 guest house on the Skaggs Springs Ranch from drawings by Eldredge T. Spencer, 369 Pine Street, San Francisco.

$70,000 SCHOOL ADDITION

The Davis Union High School District will spend $70,000 on a 3-classroom addition and a new gymnasium building. Plans have been prepared by Starks & Flanders of Sacramento.

SCHOOL BUILDING ADDITION

Three classrooms and an auditorium will be built by the Ambrose Grammar School District on the Willows Pass Road, near Pittsburg, Harold H. Weeks, of San Francisco, architect.

PALO ALTO DWELLING

A six-room dwelling is planned for Menlo Oaks in North Palo Alto for John D. Kirby from plans by John E. Fennacy, Financial Center Building, Oakland.

Giant Storage Dam of Central Valley Project, Named After Mt. Shasta

JOHN C. Page, United States commissioner of reclamation, standing on the site selected near Kennett, California, for the giant storage dam that is to become the key unit of the Central Valley Project, on September 12th officially named the proposed structure "Shasta Dam," after the majestic snow-crowned peak that guards the northern extremity of California's great Central Valley.

Mr. Page said large-scale construction on the $170,000,000 water conservation project, already in the camp-building stage, has been hastened by action of the recent Congress in clearing legal obstacles to its authorization and appropriating an additional $12,500,000 for this year's work.

The commissioner, out from Washington, D. C., on an inspection tour of Bureau of Reclamation work, characterized the Central Valley Project as "remedial, not promotional," and said it therefore "is a perfect example of the type of irrigation enterprise in which the Federal Government should interest itself."

"By providing better distribution of water in the semi-arid interior valleys of California, the project will preserve or restore these rich areas already highly developed—areas representing a producing agricultural investment of two billion dollars now facing decline or collapse because of an inadequate water supply," Mr. Page said.

Shasta Dam, during the years of preliminary study and exploration, has been known as Kennett Dam, unofficially named after a railroad way-station in the Sacramento Canyon just above the dam site 13 miles from Redding, seat of Shasta County. Mr. Page pointed to the geographical and historical significance of the name Shasta and said present engineering designs for the structure will make it one of the world's largest concrete dams.

"It will rise over 450 feet above the bed of this river, to back up water more than 25 miles and create a reservoir with a storage capacity in excess of three million acre-feet. The dam will be more than 2,500 feet long on the crest. From the white slopes of Mt. Shasta itself will come some of the waters to be controlled and regulated at the dam for the benefits of irrigation, flood protection, navigation, industrial and domestic use, salt water repulsion and power generation in the valleys below."

Contracts Let on Project

Three contracts have been let for construction features of the Government camp to be located 14 miles north of Redding, near the Shasta Dam site.

These contracts include one for the construction of 27 duplex cottages, which went to John E. Branagh of Piedmont, California, on his bid of $90,000; one for the construction of two dormitories and 43 detached residences, which was awarded to Niels Anderson of Los Angeles, California, on his bid of $128,800 and a third for the construction of a concrete testing laboratory, garage and fire station, which was awarded to Bay and Christofferson of San Bernardino, California, on their bid of $15,165.

The successful bid on the duplex cottages was the lowest of fifteen opened by the Bureau of Reclamation at its Sacramento office, August 6. The contract covers construction of 27 two-family cottages 61 ft. 6 inch by 34 ft. 2 inch. The buildings will be of wood frame construction.

The successful bid on the dormitories and detached residences was the lowest of eight proposals received by the Bureau of Reclamation at its Sacramento office, August 7. The dormitories will be 90 ft. 4 inch by 43 ft. 6 inch. The dwellings will include three six-room residences, two five-room houses, fifteen four-room houses, fourteen three-room houses and twelve two-room houses. The contractor must begin work fifteen days after being notified to proceed and must complete this job in one hundred eighty days.

The Government camp north of Redding will be available for Government employees in the construction of the Sacramento River Storage Dam, the site for which is nearby, and those employed on relocation of the railroad and highways now under reservoir area.

PROGRESS WORK AT COULEE DAM

A trainload of cement and seven trainloads of sand and gravel are poured each day into the maws of giant concrete mixers at Grand Coulee Dam, where an entirely new set of construction records are being made.

The Bureau of Reclamation reports that over 3,500,000 cubic yards of concrete has been placed in the dam, which is about a year ahead of schedule. With excavation completed, the MWAK Company, the contractor, is concentrating on placement of concrete, operating two mixing plants, one on the west and the other on the east wall of the Columbia River canyon.

The present contract, covering the construction of the foundation of Grand Coulee Dam to a height averaging about 177 feet above bedrock, is expected to be completed January 1. The Bureau of Reclamation has in preparation specifications for a new contract, under which the dam will be completed to its full height of 550 feet. Bids have not yet been called, but the call may be issued within a few weeks.

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New records have been hung up for manufacture and pouring of concrete in one day several times at Grand Coulee Dam, and the world's record established during the construction of Boulder Dam has been surpassed by about 50 per cent. Before the dam in the Columbia River in eastern Washington was started, the most concrete which had ever been placed in a dam in one day was 10,642 cubic yards, the peak reached during construction of Boulder Dam. This record was exceeded at Grand Coulee Dam for the first time in May. The greatest single day's pour at Grand Coulee up to this time was made last month when 15,600 cubic yards were mixed and poured into the ever rising forms.

Cement is now being received at the dam at the rate of about 95,000 barrels per week, or about 60 carloads a day. It comes from six cement plants scattered over the state of Washington.

Up to September 1, 15,295 carloads of cement had been received, enough to make a train 142 miles long. From the blending plant, high on the west canyon wall, where it is received, the cement is forced by compressed air through 11-inch pipes to the mixing plants, one 2,000 and the other 6,200 feet distant. Through one of these pipes, half a train load crosses the Columbia River on a suspension bridge each day.

To make the huge quantities of concrete which are being handled at the dam, a gravel pit as big as a middle west farm is worked with enormous electric shovels which deliver more than 30,000 cubic yards of sand and gravel to a washing and screening plant every day. About forty per cent of the pit output goes to waste as excess sand, and, as a consequence, a waste pile of 2,000,000 cubic yards of sand has accumulated. Processed aggregate is delivered from the washing plant to main stock piles over a 48-inch belt conveyor 5,965 feet long—35,000 tons of it every day—700 carloads. Four and a quarter miles of conveyors are in use at the Coulee Dam, handling gravel.

From the streams of sand, cement, gravel, and water poured into the two mixing plants, automatic scales, controlled by electricity and compressed air, weigh out in a few seconds precise portions of each component to make a 4-yard batch of concrete. With a two-minute mixing period, the eight mixers in the two plants produce uniform, high-strength concrete at the rate of a cubic yard in less than five seconds. A graphic record of the weight of each component and of the consistency of each batch is made automatically.

PAYNE FURNACE TAKES OVER ELECTROGAS

Announcement is made by the Payne Furnace & Supply Co. of Beverly Hills of the acquisition of the Electrogas Furnace & Manufacturing Co. of San Francisco which latter will operate in the future as a subsidiary of the Payne Beverly Hills plant.

Estimator's Guide

Giving Cost of Building Materials, Wage Scale, Etc.

Amounts given are figuring prices and are made up from average quotations furnished by material houses to San Francisco contractors. 3% Sales Tax on all materials but not labor.

All prices and wages quoted are for San Francisco and the Bay District. There may be slight fluctuation of prices in the interior and southern part of the state. Freight cartage, at least, must be added in figuring country work.

Bond—1½% amount of contract.

Brickwork—

Common, $40 to $45 per 1000 laid, (according to class of work).

Face, $100 to $110 per 1000 laid, (according to class of work).

Brick Steps, using pressed brick, $1.25 lin. ft.

Brick Veneer on frame buildings, $ .75 sq. ft.

Common f.o.b. cars, $14.00 at yard. Cartage extra.

Face, f.o.b. cars, $45.00 to $50.00 per 1000, carload lots.

HOLLOW TILE FIREPROOFING (f.o.b. job)

3x12x12 in.	$ 84.00 per M
4x12x12 in.	94.50 per M
6x12x12 in.	126.00 per M
8x12x12 in.	225.00 per M

HOLLOW BUILDING TILE (f.o.b. job)

carload lots.

8x12x5½	$ 94.50
6x12x5½	73.50

Building Paper—

1 ply per 1000 ft. roll	$3.50
2 ply per 1000 ft. roll	5.00
3 ply per 1000 ft. roll	6.25
Brownskin, 500 ft. roll	4.50
Brownskin, Pro-tect-o-mat, 1000 ft. roll	9.00
Sisalkraft, 500 ft. roll	5.00
Sash cord com. No. 7	$1.20 per 100 ft
Sash cord com. No. 8	1.50 per 100 ft
Sash cord spot No. 7	1.90 per 100 ft
Sash cord spot No. 8	2.25 per 100 ft

Sash weights cast iron, $50.00 ton.
Nails, $3.50 base.
Sash weights, $45 per ton.

Concrete Work (material at San Francisco bunkers)—Quotations below 2000 lbs. to the ton. $2.00 delivered.

No. 3 rock, at bunkers	$1.45 per ton
No. 4 rock, at bunkers	1.45 per ton
Elliott top gravel, at bunkers	2.10 per ton
Washed gravel, at bunkers	1.45 per ton
Elliott top gravel, at bunkers	2.10 per ton
City gravel, at bunkers	1.45 per ton
River sand, at bunkers	1.40 per ton
Delivered bank sand	1.00 cu. yd.

Note—Above prices are subject to discount of 2% per ton on invoices paid on or before the 10th of month, following delivery.

SAND

Del Monte, $1.75 to $3.00 per ton.

Fan Shell Beach (car lots, f.o.b. Lake Majella), $2.75 to $4.00 per ton.

Cement (paper sacks) $3.00 bbl., warehouse or delivery.

Car load lots delivered $2.70, f.o.b. cars $2.52

(Cloth sacks) $3.00 bbl..

Rebate 10 cents bbl. cash in 15 days.

Atlas White, Calaveras White, Medusa White } 1 to 100 sacks, $1.50 sack, warehouse or delivery; over 100 sacks, $1.25; 2% discount 10th of month.

Forms, Labors average $40.00 per M.

Average cost of concrete in place, exclusive of forms, 35c per cu. ft.; with forms, 60c.

4-inch concrete basement floor 12½c to 14c per sq. ft.

Rat-proofing 7½c

Concrete Steps ..... $1.25 per lin. ft.

Dampproofing and Waterproofing—

Two-coat work, 20c per yard.

Membrane waterproofing—4 layers of saturated felt, $4.50 per square.

Hot coating work, $1.80 per square.

Medusa Waterproofing, 15c per lb., San Francisco Warehouse.

Tricocel waterproofing.

Electric Wiring—$12.00 to $15.00 per outlet for conduit work (including switches). Knob and tube average $3.50 per outlet.

Elevators—

Prices vary according to capacity, speed and type. Consult elevator companies. Average cost of installing an automatic elevator in four-story building, $2800; direct automatic, about $2700.

Excavation—

Sand, 60 cents; clay or shale $1 per yard.

Teams, $12.00 per day.

Trucks, $22 to $27.50 per day.

Above figures are an average without water. Steam shovel work in large quantities, less; hard material, such as rock, will run considerably more.

Fire Escapes—

Ten-foot galvanized iron balcony, with stairs, $115 installed on new buildings; $140 on old buildings.

Floors—

Composition Floors—18c to 35c per sq. ft. In large quantities, 16c per sq. ft. laid.
Mosaic Floors—80c per sq. ft.
Duraflex Floor—23c to 30c sq. ft.
Rubber Tile—50c to 75c per sq. ft.
Terazzo Floors—45c to 60c per sq. ft
Terazzo Steps—$1.60 lin. ft.

Hardwood Flooring (delivered to building)—

13-16x3¼" T & G Maple	$120.00 M ft
1 1-16x2¼" T & G Maple	132.00 M ft
⅞x3½ sq. edge Maple	140.00 M ft

	13-16x2¼" T&G	¾x2" T&G	5-16x2" Sq Ed
Clr. Otd. Oak	$200.00 M	$150.00 M	$180 M
Sel. Otd. Oak	140.00 M	120.00 M	135 M
Clr. Pla. Oak	135.00 M	107.00 M	120 M
Sel. Pla. Oak	120.00 M	88.00 M	107 M
Clear Maple	140.00 M	100.00 M	
Laying & Finishing	13c ft.	11 ft.	10 ft

Wage—Floor layers, $7.50 per day.

Glass (consult with manufacturers)—

Double strength window glass, 20c per square foot.

Quartz Lite, 50c per square foot

Plate 75c per square foot (unglazed) in place, $1.00.

Art $1.00 up per square foot.

Wire (for skylights) 40c per sq. foot.

Obscure glass, 30c square foot.

Glass bricks, $2.40 per sq. ft., in place.

Note—If not stipulated add extra for setting.

Heating—

Average, $1.90 per sq. ft. of radiation, according to conditions.

Iron—Cost of ornamental iron, cast iron, etc., depends on designs.

Lumber (prices delivered to bldg. site).

No. 1 common	$38.00 per M
No. 2 common	34.00 per M
Select O. P. common	39.00 per M
2x4 No. 3 form lumber	26.00 per M
1x4 No. 2 flooring VG	65.00 per M
1x4 No. 3 flooring VG	55.00 per M
1x6 No. 2 flooring VG	65.00 per M
1¾x4 and 6, No. 2 flooring	70.00 per M

Slash grain—

1x4 No. 2 flooring	$50.00 per M
1x4 No. 3 flooring	40.00 per M
No. 1 common run T. & G.	35.00 per M
Lath	8.00 per M

Shingles (add cartage to price quoted)—

Redwood, No. 1	$1.10 per bdle
Redwood, No. 2	.90 per bdle.
Red Cedar	1.00 per bdle.

Millwork—Standard.

O. P. $110.00 per 1000. R. W. $115.00 per 1000 (delivered).

Double hung box window frames, average with trim, $6.50 and up, each.

Doors, including trim (single panel, 1¾ in. Oregon pine) $8.00 and up each.

Doors, including trim (five panel 1¾ in Oregon pine) $6.50 each.

Screen doors, $4.00 each.

Patent screen windows, 25c a sq. ft.

Cases for kitchen pantries seven ft. high per lineal ft., $8.00 each.

Dining room cases, $8.00 per lineal foot.

Labor—Rough carpentry, warehouse heavy framing (average) $7.50 per M.

For smaller work average $35.00 to $45.00 per 1000

Marble—(See Dealers)

Painting—

Two-coat work	35c per yard
Three-coat work	45c per yard
Cold Water Painting	12c per yard
Whitewashing	4c per yard

Turpentine, 75c per gal., in 5 gal. cans, and 65c per gal. in drums.
Raw Linseed Oil—$1.02 gal. in bbls.
Boiled Linseed Oil—$1.05 gal. in bbls.
Medusa Portland Cement Paint, 20c per lb.

Carter or Dutch Boy White Lead in Oil (in steel kegs).

	Per Lb.
1 ton lots, 100 lbs. net weight	11¾c
500 lbs. and less than 1 ton lots	12c
Less than 500 lb. lots	12½c

Dutch Boy Dry Red Lead and Litharge (in steel kegs).

1 ton lots, 100 lb. kegs, net wt.	11¾c
500 lbs. and less than 1 ton lots.	12c
Less than 500 lb. lots	12½c

Red Lead in Oil (in steel kegs)

1 ton lots, 100 lb. kegs, net wt.	12¼c
500 lb. and less than 1 ton lots	12½c
Less than 500 lb. lots	13c

Note—Accessibility and conditions cause wide variance of costs.

Patent Chimneys—

6-inch	$1.00 lineal foot
8-inch	1.50 lineal foot
10-inch	1.75 lineal foot
12-inch	2.00 lineal foot

Plastering—Interior—

	Yard
1 coat, brown mortar only, wood lath	$0.75
2 coats, lime mortar hard finish, wood lath	.80
2 coats, hard wall plaster, wood lath	.85
3 coats, metal lath and plaster	1.30
Keene cement on metal lath	1.30
Ceilings with ¾ hot roll channels metal lath	.75
Ceilings with ¾ hot roll channels metal lath plastered	1.50
Single partition ¾ channel lath 1 side	.85
Single partition ¾ channel lath 2 sides 2 inches thick	1.50
4-inch double partition ¾ channel lath 2 sides	1.30
4-inch double partition ¾ channel lath 2 sides plastered	3.00

Plastering—Exterior—

	Yard
2 coats cement finish, brick or concrete wall	$1.00
2 coats Calaveras cement, brick or concrete wall	1.35
3 coats cement finish, No. 18 gauge wire mesh	1.50
3 coats Calaveras finish, No. 18 gauge wire mesh	1.75

Wood lath, $7.50 to $8.00 per 1000.

2.5-lb. metal lath (dipped)	.17
2.5-lb. metal lath (galvanized)	.20
3.4-lb. metal lath (dipped)	.22
3.4-lb. metal lath (galvanized)	.28

¾-inch hot roll channels, $72 per ton.
Finish plaster, $18.90 ton; in paper sacks.
Dealer's commission, $1.00 off above quotations.
$13.85 (rebate 10c sack).
Lime, f.o.b. warehouse, $2.25 bbl.; cars, $2.15
Lime, bulk (ton 2000 lbs.), $16.00 ton.
Wall Board 5 ply, $50.00 per M.
Hydrate Lime, $19.50 ton.

Plasterers Wage Scale	$1.25 per hour
Lathers Wage Scale	1.25 per hour
Hod Carriers Wage Scale	1.10 per hour

Composition Stucco—$1.80 to $2.00 sq. yard (applied).

Plumbing—
From $70.00 per fixture up, according to grade, quantity and runs.

Roofing—
"Standard" tar and gravel, $6.50 per sq. for 30 sqs. or over.
Less than 30 sqs. $7.00 per sq.
Tile, $20.00 to $35.00 per square.
Redwood Shingles, $8.00 per square in place.
Copper, $16.50 to $18.00 per sq. in place.
Cedar Shingles, $9.00 sq. in place.
Recoat, with Gravel, $3.00 per sq.
Asbestos Shingles, $15 to $25 per sq. laid.
Slate, from $25.00 to $60.00 per sq. laid according to color and thickness.

Sheet Metal—
Windows—Metal, $1.75 a sq. foot.
Fire doors (average), including hardware $1.75 per sq. ft.

Skylights—
Copper, 90c sq. ft. (not glazed).
Galvanized iron, 30c sq. ft. (not glazed).

Steel—Structural
$110 ton (erected), this quotation is an average for comparatively small quantities. Light truss work higher. Plain beams and column work in large quantities $80 to $90 per ton cost of steel; average building, $95.00.

Steel Reinforcing—
$80.00 to $120.00 per ton, set.

Stone—
Granite, average, $6.50 cu. foot in place.
Sandstone, average Blue, $4.00, Boise, $3.00 sq. ft. in place.
Indiana Limestone, $2.80 per sq. ft. in place.

Store Fronts—
Copper sash bars for store fronts, corner center and around sides, will average 75c per lineal foot.
Note—Consult with agents.

Tile—Floor, Wainscot, etc. — (See Dealers)
Asphalt Tile—18c to 28c per sq. ft. installed.

Venetian Blinds—
40c per square foot and up. Installation extra.

THE BUILDERS' EXCHANGE OF SAN FRANCISCO STANDARD WAGE SCALE

For mechanics employed on construction work in the Bay Region. Effective September 1, 1937

CRAFT	Journeymen Mechanics
Asbestos Workers	$ 8.00
Bricklayers (6h-5d)	10.50
Bricklayers' Hodcarriers (6h-5d)	6.75
Cabinet Workers (Outside) (5d)	8.00
Caisson Workers (Open)	6.40
Carpenters (8h-5d)	9.00
Cement Finishers (8h-5d)	9.00
Cork Insulation Workers (8h-5d)	9.00
Electric Workers (8h-5d)	11.00
Electrical Fixture Hangers	8.00
Elevator Constructors	10.40
Engineers, Portable & Hoisting	9.00
Glass Workers (8h-5d)	9.68
Hardwood Floormen	9.00
Housesmiths, Architectural Iron (Shop) (8h-5d)	9.00
Housesmiths, Architectural Iron (Outside) (8h-5d)	10.00
Housesmiths, Reinforced Concrete or Rodmen (8h-5d)	10.00
Iron Workers (Bridge and Structural) Including Engineers (8h-5d)	12.00
Laborers, Building (8h-5d)	$ 6.00
Laborers, Common (8h-5d)	6.00
Lathers, Channel Iron (6h-5d)	9.00
Lathers, All Others	9.00
Marble Setters (8h-5d)	10.50
Marble Setters' Helpers (8h-5d)	5.00
Millwrights	9.00
Model Makers ($1.50 per hr-6h)	9.00
Modelers ($2 per hr-6h)	12.00
Model Casters	7.20
Mosaic and Terrazzo Workers (Outside)	9.00
Painters (7h-5d)	8.50
Painters, Varnishers and Polishers (Outside)	9.00
Pile Drivers and Wharf Builders	9.00
File Drivers' Engineers	10.00
Plasterers (6h-5d)	9.00
Plasterers' Hodcarriers (6h-5d)	7.50
Plumbers (8h-5d)	11.00
Roofers, Composition (8h-5d)	9.00
Roofers, All Others (8h-5d)	8.00
Sheet Metal Workers (8h-5d)	10.00
Sprinkler Fitters	10.00
Steam Fitters (8h-5d)	$11.00
Stair Builders (8h-5d)	9.00
Stone Cutters, Soft and Granite (8h-5d)	8.00
Stone Setters, Soft and Granite	12.00
Stone Derrickmen	9.00
Tile Setters (8h-5d)	10.50
Tile Setters' Helpers (8h-5d)	6.50
Tile, Cork and Rubber (8h-5d)	9.00
Welders, Structural Steel Frame on Buildings	11.00
Welders, All Others on Buildings	9.00
Dump Truck Drivers, 2 yards or less	6.00
Dump Truck Drivers, 3 yards	6.50
Dump Truck Drivers, 4 yards	7.00
Dump Truck Drivers, 5 yards	7.00
Dump Truck Drivers, 6 yards	7.50
Truck Drivers of Concrete Mixer Trucks:	
2 yards or less	6.50
3 yards	7.00
4 yards	7.50
5 yards	7.50
6 yards	8.00

GENERAL WORKING CONDITIONS

1. Eight hours shall constitute a day's work for all crafts except as otherwise noted.
2. Plasterers' Hodcarriers, Bricklayers' Hodcarriers, Roofers' Laborers, and Engineers, Portable and Hoisting, shall start 15 minutes before other workmen, both at morning and at noon.
3. Five days, consisting of not more than eight hours a day, on Monday to Friday inclusive, shall constitute a week's work.
4. Transportation costs in excess of twenty-five cents each way shall be paid by the contractor.
5. Overtime shall be paid as follows: For the first four hours after the first eight hours, time and one-half. All time thereafter shall be paid double time. Saturdays (except Laborers), Sundays and holidays, from 12 midnight of the preceding day, shall be paid double time.
6. On Saturday, Laborers shall be paid straight time for an eight-hour day.
7. Where two shifts are worked in any twenty-four hours, shift time shall be straight time. Where three shifts are worked, eight hour's pay shall be paid for seven hours on the second and third shifts, allowing one-half hour for lunch.
8. All work, except as noted in paragraph 9, shall be performed between the hours of 8 a.m. and 5 p.m.
9. In emergencies, or where premises cannot be vacated until the close of business, men then reporting for work shall work at straight time. Any work performed on such jobs after midnight shall be paid time and one-half up to four hours of overtime and double time thereafter, provided, that if a new crew is employed on Saturdays, Sundays or holidays which has not worked during the five preceding days, such crew shall be paid time and one-half.
10. Recognized holidays to be: New Year's Day, Decoration Day, Fourth of July, Labor Day, Admission Day, Thanksgiving Day, Christmas Day.
11. Men ordered to report for work for whom no employment is provided, shall be entitled to two hours' pay.

Don D. Fleming has been appointed general manager of the company, now known as Electrogas Division of the Payne Furnace & Supply Co., Inc. W. W. Norton will continue with the firm as superintendent.

The Electrogas Division will operate independently from the Payne Furnace & Supply Co., except that the production and merchandising policies of this company will be consistent with the policies established by the Payne Furnace & Supply Co.

Construction will start immediately on a new addition to the present Electrogas plant, adding twelve thousand square feet of factory space. Plans include the purchase of new equipment and machinery to place in operation a thoroughly modern and efficient manufacturing plant.

SCHOOL OF ARCHITECTURE AT COLUMBIA

Social aspects of housing, illustrated in the solutions to the housing problem attempted or proposed by private and public agencies in the United States and other countries, will be investigated in a new course to be given by Columbia University Extension this fall.

Dr. Carol Aronovici of the Department of Architecture, in charge of the course, plans to evaluate the social and technical implications of the problem in terms of a constructive program suited to the United States.

A new course on the financing and organization of building operations will also be offered by the architecture department. From the viewpoints of the architect, builder, and owner, Professor K. A. Smith will discuss job organization, office practice, financial set-up, titles, mortgages, insurance and bonds, the organization of building operations, trade unions, contracts between owner, architect, and contractor, and allied topics.

The Department of Architecture has scheduled nineteen evening courses for the winter session.

STUDY WOOD FURNITURE MARKET

The total value of all furniture in 1935, based on a survey just completed by the National Lumber Manufacturers Association, amounted to $400,000,000. In 1936, a conservative estimate placed a comparative figure at $650,000,000—lumber's share being about 1,340,000,000 board feet, a valuable and sizeable market.

Conservatively figured, the total amount spent for all kinds of office furniture was some $44,000,000, including about $17,600,000 worth of wood furniture.

According to the NLMA survey, 75.6% of the amount spent for office chairs bought chairs made of wood; of the total for desks and tables, 68.6% represents the percentage spent for desks and tables of wood; and 7.5% of the amount for filing cases. There is also a figure of some $5,138,000 buying miscellaneous office furnishings, and of this, 45.6% was spent for wood.

Wood manufacturers have been active this year with an eye on the relatively, and they hope temporarily, diminutive part of the file cabinet market which has been theirs in the past. Now, the survey points out, it

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is no longer necessary for the business executive to do without "real" wood-exteriored filing cabinets which match his other fine furniture in the business offices. The latest development is a cabinet with an exterior of cored veneer stock with light-weight metal drawers. The exterior wood in beautiful designs blends with the other office furnishings and has the advantage of being a slow heat conductor in case of fire. These cabinets are priced equal or slightly less than equivalent cabinets in other materials.

The indication is that filing cabinet manufacturers in cooperation with the lumber industry will be producing the cheaper wood cabinets shortly along similar lines, so that small, as well as large offices, can have the satisfaction of well designed wood furnishings throughout.

THE 1939 FAIR

(As Visualized by a Writer in Illinois Society of Architects' Bulletin)

Hats off to the planners of San Francisco's '39 Fair for poetic imagination and dramatic sense. Their site is a man-made island in the middle of San Francisco Bay, approached by bridge from Yuerba Buena Island and by ferry. Oriental are the motifs in the western facades and here is the main front. Elephants play an important part in the decoration and there will be elephant towers.

These planners speak of the picture to be erected as the "Never Never Land." The wall of the western facade, one-half mile long, eighty feet high and two hundred feet deep, houses exhibit halls. There will be no windows. The effect is to be that of an ancient walled city connecting with inner courts. It is to be a Pageant of the Pacific. Among the features will be the Avenue of the Seven Seas, the Court of the Hemispheres, the Theater of the Sky, the Pacific Pageant of Flowers, Flowers from Heaven Court, and the Port of the Trade Winds.

The New York Fair has certain publicity advantages, although the Californian is never behind in singing the praises of his fair land. Remember the story of the Californian away from home, finding himself at a funeral service where he was called upon to say a few words in memory of the deceased? The Californian happened to be a stranger to the deceased, but did not let the opportunity pass of telling the mourners about the glories of California's climate.

After the Fair the island will be used as a municipal airport.

JULIUS E. KRAFFT, ARCHITECT

For many years a practicing architect in San Francisco, but for some time past retired, Julius E. Krafft died September 26 in a Belmont sanitarium following an illness of several months. Surviving are two sons and two daughters, Elmer J., Alfred J., Mabel, and Elsa Krafft, all of San Francisco.

Mr. Krafft was the architect of a number of outstanding buildings in his time. He maintained offices in the Phelan Building and since retirement practice has been successfully carried on by his sons.

ARCHITECTS SUPPORT HOUSING PROGRAM

A MOVEMENT to mobilize "all the man power and intellect of the architectural profession" in support of the national housing program authorized by Congress has been launched by the American Institute of Architects, according to an announcement made public by Walter R. McCornack of Cleveland, chairman of the Institute's Committee on Housing.

Architects will immediately take steps to enter the housing field as leaders and to rid it of social hysteria and false notions of the American standard of living, Mr. McCornack said. "The architect is the unbiased arbiter between the building public and the building industry," he declared. Sixty-nine Chapters of the Institute throughout the country will unite in carrying out the Institute's plans.

Congress has thrown down the gauntlet to the building industry, and immediate action by this industry to cheapen the cost of homes, as automobile manufacturers have cheapened the cost of cars, is demanded, Mr. McCornack pointed out. Local communities should eventually bear more of the cost than is required by the Wagner-Steagall bill, and the $5,000 limit for a four-room dwelling unit should be cut to $2,500, he held.

Mr. McCornack warned that the real objective of a low-cost housing program is to produce safe and sanitary dwelling units for families now living in insanitary and socially degrading homes.

"It is not primarily to provide business for manufacturers of building materials and equipment, or to bail out landowners who now desire to escape the consequences of greedy speculation, or to assure a new era for the speculative builder, or to create a lot of work for union labor," he added.

"Under the recent housing program many who composed these groups seemed to consider that program as established for their special benefit. The result was that the Government built housing for which, even with a 45 per cent grant, it was forced arbitrarily to fix a rent which bore no sane relation to capital cost. It was also necessary to select tenants with incomes above what tenants for low-rent housing should pay—leaving the evicted slum dwellers to shift for themselves and, in many cases, to live in worse dwellings than they had previously occupied.

"The Government's program was worth its cost, but it did not produce the kind of housing which is essential if we are successfully to clear our cities of slums.

"The low-cost housing built by the Government so far is better than that in which many hundreds of thousands of taxpayers can afford to live. Through taxation they were forced to pay for housing accommodations more elaborate and more costly than necessary to serve the fundamental purposes intended.

"In the act of 1937 Congress did the slum dwellers of America a great service by limiting the cost of dwelling

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units to be constructed and, in addition, it throws down the gauntlet to the building industry in no uncertain terms.

"A nation which has grown to be the most powerful on earth, with unequalled natural resources, great cities, transcontinental transportation systems, electricity in all its varied forms, radio, the low-priced automobile, sound motion pictures, the electric eye and many other things in our great industrial system, cannot continue to construct homes by methods a century old and expect the small taxpayers to saddle the load. They cannot and will not do so.

"In spite of the many arguments that the machine age is ruining our social and economic system we shall no doubt be compelled to simplify and cheapen our methods of home building. It is a well-known fact that many of our leading automobile manufacturers in the low-cost car field have cut the costs of their cars in half and improved the quality. In the so-called low-cost housing field the opposite has been the case.

"Our much discussed American standard of living which many are seeking to impose on housing, is not the standard at all. The standard is actually what the mass of the people have, and that is far below what we regard as necessary for a low-cost housing program.

"In their youth thousands of our leaders today in all walks of life did not enjoy standards of living now regarded as essential. They did have clean and decent environments with plenty of fresh air and recreation—and that is what our present objective should be. A little less social hysteria and a little more common sense will find a way."

Increasing local participation in housing costs is foreseen by Mr. McCornack. "The original bill would have made it possible under certain conditions for localities to secure 100 per cent Government aid.

"The bill was changed to require local authorities to provide 10 per cent of the cost. Facts which have been developed indicate that the slum areas of our cities are a serious financial burden on local taxing units, and that the elimination of these areas would greatly reduce the cost of government in localities where there are slums.

"It would, therefore, appear just to assess part of the cost locally. As a matter of fact, the local communities should eventually bear more of the cost than set up in the bill. No doubt this will come about as the program develops nationally and cities find themselves better able to do so.

"During the years of the depression the various cities looked to the national government for aid and formed one more bloc appealing for help from the national treasury. Our great cities were developed through local initiative and courage. When we return to that method they will be rebuilt in a saner and more economical way."

PAROCHIAL SCHOOL

Henry A. Minton, 525 Market Street, San Francisco, has been commissioned to prepare plans for a parochial school in Burlingame for St. Katherine's Parish.

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PLUMBING FIXTURE PRICES

Prices of plumbing and heating products today are below the average for the past twelve years and 10 per cent below the average prices prevailing in 1930 and 1931, says the Plumbing and Heating Industries Bureau on the basis of an analysis of tabulations of building material costs as reported by the Bureau of Labor Statistics of the United States Department of Labor.

A study of the trend of plumbing prices in comparison with the average price of all basic commodities shows conclusively that plumbing prices declined further than commodity prices in general. Once the upward trend started, the advance in commodity prices was far more rapid than prices in the plumbing industry.

The upward trend in plumbing prices began in May, 1933, and continued until March of 1937. Since March there have been no increases in the basic price index number of the plumbing industry as reported by the United States Department of Labor.

While price adjustments occurred early this year they were very minor. Thus, the difference between the average index number for 1936 of 75 and the index number of today, 78.7, is only 3.7 points or a difference of about 5 per cent. When applied to a plumbing installation costing $250, this means that the price of the basic materials is approximately $12.50 more today than it was during 1936.

There has been some comment in uninformed quarters about construction being retarded by a too rapid rise of prices. It is evident from the official Department of Labor figures that this comment may apply to commodity prices in general and to some building materials but certainly is not applicable to plumbing and heating prices nor to prices of paint products. Plumbing and heating prices have consistently lagged behind a rising market.

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FACTS—ABOUT HOUSING

The importance of building as a factor not only in the advancement of living standards, but in maintaining the national economic balance, is reflected in a compendium of "Facts About Construction and Housing" issued by the Chamber of Commerce of the United States.

Among the facts listed, from official and authoritative sources, are:

That from a peak of $11,060,000,000 in 1928 the volume of construction decreased to a low of $3,002,000,000 in 1933. It increased to $6,784,000,000 in 1936.

That private residential construction accounted for 39.2 per cent of the total construction outlay in 1928 and only 18.4 per cent in 1936.

That "overcrowding" of dwellings is much less in the United States than in many foreign countries, the percentage of such overcrowded dwellings ranging from 3 per cent in England to 1.4 per cent in 64 American cities.

That during the present decade the average annual increase in the number of families will approximate 475,000 to 500,000.

That the average annual number of family dwelling units upon which construction was started was 677,000 in the decade 1920-1929 and only 165,000 in the seven years 1930-1936.

That the total number of dwelling units built or under construction by the federal government to date is only 27,161.

That the greatest lag has been in the construction of low cost housing.

That the number of firms engaged in contract construction decreased from 135,057 in 1929 to 75,047 in 1935.

That regular construction employment reached a peak of 2,888,000 in 1928 and declined to 629,000 in 1934, recovering to 1,210,000 at the 1936 peak.

That savings and loan associations hold 23.1 per cent and private individuals 21.4 per cent of the $17,740,000,000 of home mortgages outstanding.

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PRODUCERS COUNCIL IS GROWING

Further cooperation in the building field is seen in the recent announcement of Russell G. Creviston, President of the Producers Council and director of advertising and sales promotion for the Crane Co., that seven large companies have been admitted to membership in the Council since its June meeting.

These companies include the International Nickel Co., National Radiator Co. of Johnstown, Pa. and The Flintkote Co. of New York, Detroit Steel Products Co. of Detroit, Curtis Companies of Clinton, Iowa, Gladding McBean Co. of San Francisco, and the Richmond Screw Anchor Co. of Brooklyn.

These companies bring the total membership of the Producers' Council, affiliated with the American Institute of Architects, to fifty-one and comprising many of the largest manufacturers of building materials and equipment in the country.

"Most manufacturers," said Mr. Creviston, "realize that the great increase in building in the past two years is going to continue. There also is coming a general realization that it is to their advantage, as well as to the advantage of the builder and building owner, to cooperate in supplying accurate information about building, and to promote fair trade practices.

"The Producers' Council, formed in 1921 at the suggestion of the American Institute of Architects, has done a great deal toward eliminating ambiguous and uneconomical specification requirements, the "or equal" clause in specifications, and other practices held to be detrimental to producer and consumer, alike. Plans for a wide-spread program of public education also are being discussed, and it seems likely that steps will be taken in this direction to supplement the efforts of individual manufacturers."

HOUSING

As finally passed after drastic modification by both Senate and House, the Federal Housing Bill virtually removes the government from competi-

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tion with private housing enterprise. Moreover, the bill provides for the liquidation of Federal activities in the housing field by means of sale or lease to local public housing authorities and is designed primarily for slum clearance.

Almost unnoticed, but potentially of great significance in improving housing conditions through reduction of cost by improved methods of construction, is the appropriation of $300,000 to the United States Bureau of Standards for a study of technical problems in house building.

A program laying stress on new construction methods, as well as new materials and equipment, would provide assistance to efforts in the building industry to provide lower-priced and better housing.

SAN FRANCISCO BUILDING

A shortage of housing in San Francisco is stimulating subdivision building, according to reports made to the San Francisco Real Estate Board. Homes priced between six and eight thousand dollars are in the greatest demand, it was reported, and there is also much demand for houses from ten thousand dollars and up.

San Francisco's school building program was advanced recently with the adoption by the Board of Education of a $10,736,733 budget and the announcement that the $1,600,000 improvement program had been widened.

San Francisco officials tentatively agreed recently to trade a Polk and McAllister Streets building site for the 450 McAllister Street State building annex. On the site obtained from the city the state is planning to build a new State building annex to cost approximately one million dollars.

Replacement of the old United States Customs appraiser's building at Sansome, Washington and Jackson Streets with a modern five-story building moved a step nearer reality recently. Heading a list of California projects included in the twenty-three million dollars worth of construction of Federal buildings throughout the country during 1938, recommended

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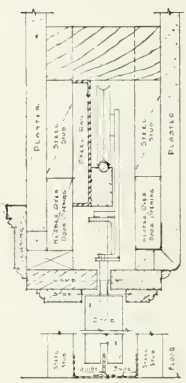

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by the House Appropriations Committee, was an appropriation of $4,250,000 for the construction of the proposed appraiser's store and immigration station on a site adjacent to the Customs Block.

Plans for the establishment of a new Columbia Broadcasting setup in the Palace Hotel were announced recently by the Columbia Broadcasting Company. The estimated cost of the plant is $350,000 and the new headquarters are expected to be finished by November.

M. Greenberg's Sons recently announced plans for immediate construction of a new $250,000 building in San Francisco to cover the entire block bounded by Fourth, Folsom, Alice and Shipley streets. It is reported that this company will have what is said to be the largest brass foundry in the entire West when the building is completed.

The Federal Farm Credit Administration recently announced plans to build a $400,000 office building opposite the city hall in Berkeley. It is anticipated the building will be completed by the end of 1938, when the Farm Credit Administration will return to Berkeley where its headquarters were prior to moving to Oakland.

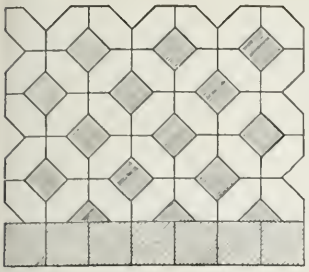
One thousand men are engaged in a $16,000,000 building program on the Yerba Buena shoals site of the 1939 Golden Gate International Exposition.

GRADE CROSSINGS

Five dangerous railroad crossings on highways leading directly into San Francisco Bay cities will be eliminated this fall at a cost of $750,000. The projects listed include a subway under the Milpitas - Niles branch of the Southern Pacific Railroad at a cost of $200,000; two new overpasses and an underpass, at a cost of $362,000, to eliminate dangerous crossings near Livermore on the new Altamont Pass road; and a $185,000 crossing over the Santa Fe tracks at Pinole.

HEATLESS SKYLIGHTS

Skylights are being made in Italy of two layers of glass with a layer of glass wool between, to keep out heat from the sun.



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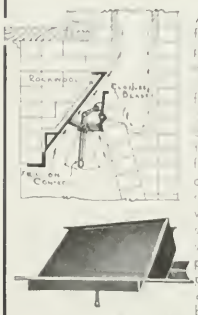

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NOTES AND COMMENTS

(Concluded from Page 2)

afford his own satisfaction and to present his hearty congratulations to Roland E. Coate, F. A. I. A.

* * *

The recent passing of John Russell Pope caused deep sorrow in the architectural profession, with which Mr. Pope had been associated for many years. Internationally known, Mr. Pope had been president of the American Academy in Rome since 1933, and only 26 days before his death a great white shaft of granite, designed by him, was dedicated with brilliant ceremonies, in France, to commemorate the victory of the American First Army in the Meuse-Argonne offensive. He was the architect for the Jefferson Memorial, Washington, and the Roosevelt Memorial in New York and Washington. He designed the National Art Gallery in Washington, which cost $15,000,000.

Mr. Pope was like his work—simple and strong. He won many honors, yet always remained modest. In life, as in art he was human, sensitive broad minded and steadily sustained by principle.

* * *

Most of the so-called air conditioners being offered to architects consist of nothing more than a fan built into some sort of a fancy cabinet and selling for about three times the value of the materials used. Occasionally the installation contains a method of vaporizing water to increase the humidity of the room. In any event, equipments selling at a ridiculously low price—ridiculous in the face of the necessary cost for true air conditioning units—have little or no more value from the standpoint of air conditioning than a fan.

Scientic American says it is encouraging to learn that the Federal Trade Commission has recently stepped into the picture and "verbally spanked one manufacturer of an air 'purifier' and circulating device." The Commission has ordered that this company discontinue the use of the words "air conditioning" from its advertising.

The Air Conditioning Manufacturers' Association points out, furthermore, that the Federal Trade Commission has defined true air conditioning as consisting of warming, humidifying and circulating of the air in the winter and cooling, dehumidifying and circulating of it in the summer, preferably also cleansing of the air at all times.

Since a certain amount of housing has been completed it will now be an advantage to evaluate what has been done, and to suggest certain procedure for action by the architectural profession—in view of the fact that in the next decade there will be a tremendous forward movement in housing construction of all types.

With the setting up of a National Housing Authority under the Wagner-Steagall Bill, if enacted, it will be possible for the first time in the history of housing in the

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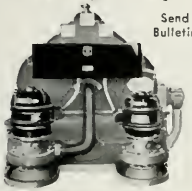

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United States to have a single point of housing contact with government.

Since this Housing Authority is not to be an actual construction agency but a research and stimulating agency, it will provide a means through which the architectural profession can express itself and make constructive criticisms for carrying out programs of housing in the various sections of the United States. The result to be secured from the Housing Act will be more effective if the National Housing Authority concentrates on research and promotion of low rent housing by local, state and municipal government.

To this end each Chapter of the American Institute of Architects will be asked to organize a permanent Chapter housing committee which shall act as the local agency through which the main housing committee may present the case for housing in the various districts more directly to the people and more especially to the banks and other lending agencies, real estate operators and the construction industry as a whole.

Before the architects of the country can effectively assume leadership in this field it will be necessary for them to organize thoroughly on a nation-wide basis. By this means, it will also be possible for the Institute to build up a housing policy which will not consist in generalities but in definite suggestions and recommendations based on the needs and the varying conditions.

The construction of Boulder [illegible] of the world's greatest [illegible] is recorded in a four-reel sound film made by the Bureau of Reclamation.

The film [illegible] with a view of the Black Canyon of the Colorado River a [illegible] the engineers first went on the job and [illegible] through the construction of the 72 [illegible] block of concrete steel by step to its completion. A limited number of prints made from the official negative are available for loan to educational institutions, [illegible] organizations, other groups and theaters.

The sound picture is available in both 35 and 16 mm. film. A silent version of the picture is being prepared in 35 and 16 mm. film and prints of it also will be made available soon to architects and engineers societies to show at their meetings.

THREE-QUARTER ROOM

The half room has come to be generally known. Now comes the three-quarter room. It has been introduced by a Brooklyn agent in advertising apartments he has for rent. The three-quarter-size room is off the kitchen and has a window. The suggestion is made that the room might be used as a den or as a dining room, but it is more than the accepted idea of half a room.

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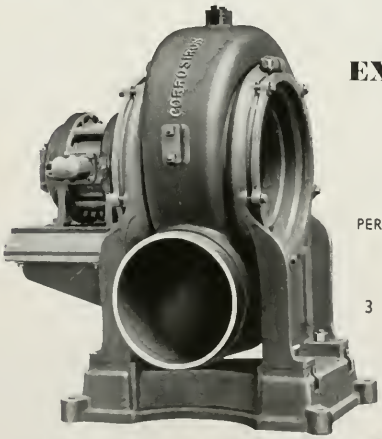

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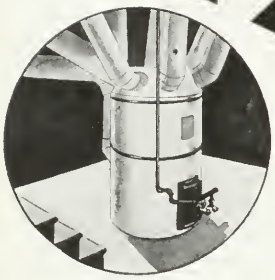

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THE... ARCHITECT & ENGINEER

November · · 1937

COVER PICTURE — CLOISTER, RUTH SCHOOL, EL MONTE, CALIF.
G. Stanley Wilson, Architect

FRONTISPIECE — RESIDENCE OF MRS. LESLIE F. HILL, KENTFIELD, CALIFORNIA
Carl F. Gromme, Architect

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Notes and Comments

Responsibility for structural safety of design has been placed on architects and engineers by many building codes and ordinances. Following a series of disastrous fires, particularly that of the ill-fated Kerns Hotel at Lansing, the Michigan State Assembly recently deemed it wise to also include fire safe construction among the responsibilities of these professions.

The resuult is that Michigan architects and engineers who henceforth fail to take steps necessary to assure fire safe construction in the school buildings they design will be in danger of having their licenses revoked, also liable for prosecution for misdemeanor, if we are to believe the statement made in a recent issue of the Bulletin of Michigan Society of Architects.

The primary purpose of the new law would appear to be erection of fire safe buildings for schools.

Hereafter plans and specifications for all Michigan school buildings of two or more floors—and the basement is counted as one floor—must be prepared by an architect or engineer registered in Michigan. He is made responsible for "constructing the building of adequate strength so as to resist fire, and . . . in a workmanlike manner".

Making it a misdemeanor should the architect fail to see that his plans and specifications are executed so that the building will resist fire, is a new departure and for the first time emphasizes that fire safety insofar as building regulations are concerned, is recognized to be of at least equal importance with structural safety.

* * *

A Newly awakened appreciation of comfort will do more to broaden the housing market than government subsidies, round-table theories, or luxury-item competition, is the opinion expressed by Arthur R. Herske, vice-president of the American Radiator Company, at a recent conference in Boston Mass. Chief of all trends today, he said, is the trend toward Comfort. We have passed successively through eras of communication, transportation, steel and entertainment, and, as the colonization of the West carried with it railroad expansion, so will the trend toward comfort carry with it a new era in housing. Over a period of years we have steadily gone forward in demands for rapid transportation for appearance and for convenience and today a laggard rears his head—the desire for comfort. Comfort, regardless of temperature, wind or water.

Year-round comfort in homes is within a year's reach of the great mass market and Mark Twain's old adage that "Everybody talks about the weather but nobody does anything about it" will soon be changed. Doing something about it will be the forerunner of an expanded housing industry.

Building is the sole major industry which to date has gone through only the first three of the four cycles of consumer acceptance—durability, appearance, convenience, and comfort.

* * *

Bay District Engineers—civil and structural—had some busy times the past month. While architects of the State were convening in Santa Barbara, the Structural Engineers Association of California were holding their annual convention at Asilomar Hotel, near Pacific Grove, on the beautiful 17-Mile Drive. At the same time the San Francisco Section, American Society of Civil Engineers, staged its annual party at Castlewood Country Club, Pleasanton. Dinnedance, golf and other attractions proved alluring bait to a large delegation in fact kept not a few from attending the Pacific Grove meeting. Delegates to the latter were accompanied by their wives who enjoyed a week-end outing to the fullest extent. Next year the convention will probably be held in the South.

* * *

While many architects differ materially with the Frank Lloyd Wright School most of them, nevertheless, like to read what he has to say and what is more, view with interest, if not with approval, some of his achievements. Recently Mr. Wright was the honored guest of the Soviet government and while in Russia he attended a meeting of the All-Union Congress of Architects, was entertained by the Academy of Architects at their palace in Moscow, and also visited their 400-acre park and recreation retreat at Suchanov.

Writing his impressions in the October Architectural Record, Mr. Wright described Russian architects as far in advance of their American conferes in socal consciousness and in power to visualize the finer creations they may build when their proletarian mass-client will permit them to design independently of traditional ideas.

He found that misfortune befell Moscow when her architects took after the left wing. That mistake in direction left some very negative and foreign results. The popular reaction was "picture-making in the antique, the picture-making which the older people learned as children to admire and covet."

In spite of a fine city plan, splendid wide avenues and park spaces that have already been laid out, palatial subway stations far superior to those of New York, and moving picture theaters described by Wright as the finest good-time places to be seen anywhere in the world, he found a definite cultural lag that is checking the forward development of new architectural creations. In his opinion, all of the new Moscow will be too high. There will even be four-story school buildings where one-story would be ideal.

Russian architecture marks her strength and vitality, but still, even to a seasoned observer like Mr. Wright, there is today and will be for some time to come something peculiar to the present cultural state of the Soviet in the sharp contrast between the workman's clothes and the skyscraper elegance.

* * *

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SIX THOUSAND feet above sea level on the southern slope of majestic Mount Hood, stands Timberline Lodge, dedicated by President Roosevelt September 28 while he made a two-hour stop to inspect the nearly completed hostelry. It was at this location, too, that he made a national broadcast, which followed the dedication of Bonneville Dam on the Columbia River earlier in the day.

Sponsored and designed by the United States Forest Service and constructed by the Works Progress Administration, Timberline Lodge is destined to become one of America's popular tourist resorts for it is located in a great winter and summer playground of the Pacific Northwest, just 62 miles east of Portland.

Timberline Lodge is a monumental rustic structure of native timber and stone. The hotel cost $650,000. Unquestionably it compares most favorably with the famous inns of the Swiss Alps. Every window of the new lodge frames a magnificent vista of snow capped peaks and forest clad mountains as far as the eye can see down the Cascade Range. The building is truly fascinating in design and is unique in every detail. Here is appropriately expressed the spirit of the Indians and the courageous pioneers, who struggled to get their covered wagons through nearby Barlow Pass nearly a century ago. Its massive walls and informal simplicity give it a charm and mark of distinction that only stone and wood can give.

Aluminum Laundry Chute for Two Story House

THE HASLETT CHUTE and Conveyor Company, of Oaks, Pa., makers of gravity spiral conveyors, spiral chutes and fire escapes, is now manufacturing an aluminum laundry chute for the home.

The new chute is designed and sold in units to fit the average two-story house, and is in three sections.

Made completely of welded aluminum, and equipped with two flush wall openings, the chute runs between the walls from the second floor to the laundry room in the basement. The openings, one on the second floor, in the bathroom, and the other conveniently on the first floor, are covered with attractive satin finish die cast aluminum doors.

Full Scale Model of "The Town of Tomorrow"

A NEW CONCEPT of modern community planning which, it is believed, will influence profoundly the building industry, housing design and even the American way of life, will be demonstrated at the New York World's Fair 1939.

Preliminary plans call for the erection of a full-scale model village—The Town of Tomorrow. This com-

AND NEW DEVICES

munity—representing a segment of a town of 3,500 population—will spread over ten acres of ground, cost in excess of $1,500,000 and include thirty-five houses and group houses, a community arts center, a nursery school, a playground and stores.

The Town of Tomorrow will be an integrated neighborhood—not just a collection of model homes put up by individual exhibitors. Houses will be Fair-designed and Fair-built, with manufacturers contributing materials and furnishings and sharing in the cost. A roofing company, for example, will supply the roofs of four or five houses, a brick manufacturer the walls, a plumbing concern the bathroom and kitchen equipment. Commenting on the plan an official of the Fair said:

"Instead of or in addition to buying space or interior exhibit space in the Fair, these companies will buy parts of these model homes as a means of displaying their products. This procedure is something new. It has never been attempted at any previous exposition.

"In architecture the town will also represent a departure from the usual practice in model village design. A variety of architectural styles and building materials will be used, but the effect of the whole will be harmonious. Unity rather than uniformity will be the goal."

Electric Range With Built-in Cooking Kettles

NECESSITY for frying pans, double boilers, and all the other varied pots and pans a housewife uses, is obviated by a new electric range introduced by Electromaster, Inc. Four cooking kettles, called Vita-Misers, are built into the top of the stove. They are of sizes and depths to serve all purposes. Other features include lighted oven, swinging table lamp, built-in electric time clock, and seamless one-piece table top and back plate.

STATE BOARD EXAMINATIONS

The next examination for a certificate to practice architecture in California will be held December 6, 7, 8 and 9, at the University of California, Berkeley.

The registration fee is $15.00 and your fee must reach this office not later than November 22, 1937.

Further details may be secured from the Board Office at 450 McAllister Street, San Francisco.

PRODUCERS' COUNCIL

A handsome brochure containing interesting facts about this organization and giving besides, its 1937-1938 program. The book contains a list of member firms and the Council's services as offered to its members. Published by The Producers' Council 19 West 44th Street, New York City, N. Y.

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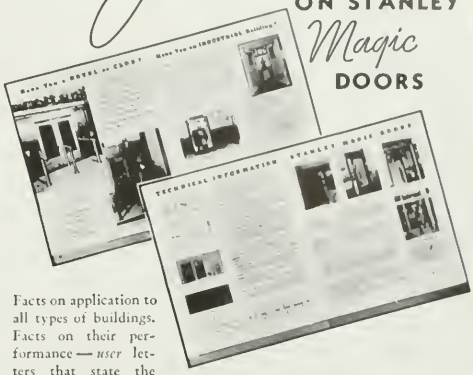

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GLENDALE COTTAGE HAS ARCHITECTURAL CHARM

HOME OF MR. AND MRS. KENNETH WEISER, GLENDALE, CALIFORNIA
ERWOOD P. EIDEN, ARCHITECT

SNUG comfort and compactness have not infrequently been associated with English cottage design. So when this is successfully adapted to our modern California home requirements of spaciousness and outdoor living facilities, it may be regarded as an accomplishment.

A happy combination of these two ideals has been achieved in the Glendale home of Mr. and Mrs. Kenneth Weiser, designed by Architect Erwood P. Eiden. On the stucco exterior, used brick, shingle roof, brick porch and walks, leaded glass and wood siding for the gables, give the architectural charm of the English cottage.

Two bedrooms, living room, dining room, tile bath and service porch comprise the interior, with stucco finish and hardwood floors. Cooking, heating, refrigeration and water heating have been planned with the most modern gas equipment for complete automatic operation. The well designed kitchen contains the latest type gas range with time clock and automatic oven heat control, and gas refrigeration. Comfortable temperatures are provided by an automatic gas floor furnace. There is an automatic storage water heater.

The outdoor porch, equipped with barbecue fireplace and large brick terrace, is the feature which serves to fit this home into its Southern California environment. One end of the kitchen opens upon the terrace and serves as a dining nook besides, with a Dutch door for kitchen service to the patio.

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PULSE OF THE READER

ART WEEK

Dear Editor:

Has any one told you about National Art Week? Mrs. Loyola Fourtane is working with the Marin County Society of Artists in Sausalito, San Rafael, San Anselmo, even Tiburon, Belvedere, Corte Madero and Bolinas where they have many exhibitions.

Mrs. Alice May Baker and Mrs. Ethel Newall with Mrs. Parker are thoroughly stirring San Francisco, including the Mayor, the clubs, stores, and I do not know how many others.

The purpose is to create appreciation of art, one of the very great needs of the architects, I feel. It is their distinctive quality which sets them apart from engineers and builders. We have some interest among them here and the feeling that much Civic good will come from our efforts along these lines.

With kindest personal regards

Sincerely

JULIAN MESIC

Oakland, Calif. Oct. 24.

CLASS LEGISLATION?

Dear Editor:

If the following points were used as a basis for a test of the California law regulating the practice of architecture could it be proven that this law is class legislation, a method of taxation without representation and dictatorial bureaucracy?

"Said California State Board of Architectural Examiners shall be appointed as follows: Five members shall be selected from the membership of the Northern California Chapter or Chapters of the American Institute of Architects, or other similar associations of architects. Five members shall be selected from the membership of the Southern California Chapter or Chapters of the American Institute of Architects, or other similar associations of architects. All appointees shall be members in good standing of their respective association of architects."

Laws of other states usually require that members of the Board of Examiners shall be certified architects of the respective state, and sometimes that they have been practicing in the respective state for a certain number of years.

A study of the architectural laws of other states was made and no laws were found in any other state in the United States regulating the practice of architecture by an A. I. A. restriction. None of the other professions of this state (coming under the jurisdiction of the Department of Professional and Vocational Standards) have any similar restriction.

Said Department of Professional and Vocational Stanlards does not recognize State Association members as qualified for the Board of Examiners if not A. I. A. members.

Not because the S.A.C.A. outnumber the A. I. A. members 4 to 1, but because of the danger of having the entire law regulating our practice set aside as illegal, it might appeal to all architects of this state to recommend a thorough revision so that our law as well as our architecture is in the front rank.

ARTHUR H. MEMMLER

Berkeley, Calif.

IS IT THAT BAD?

Dear Editor:

Why the dinginess of your buildings in down town San Francisco, particularly on Market Street? This "down at the heels" appearance of many of your more prominent buildings, is a lamentable condition and makes a former San Franciscan like myself very sad indeed when on a visit to your city. How about a little paint,— some soap and water, maybe, and even a coat of whitewash? Something should be done before the 1939 Fair, or your visitors will be disappointed, don't you think?

GRAHAM CARIG

Los Angeles, Calif.

UNAUTHORIZED PLAN

(Editor's Note.—In The Architect and Engineer for July there was published several drawings illustrating the University of Washington campus and credited to Butler S. Sturtevant, landscape architect of San Francisco. Exception to the publication of these pictures has been taken by Carl F. Gould, architect of Seattle, whose correspondence, in part, follows.)

Dear Editor:

I am enclosing herewith a copy of my letter to Mr. Sturtevant, mentioned in my letter to you of Oct. 8th.

In accordance with a previous communication, perhaps you would wish to publish the second paragraph of my letter to Mr. Sturtevant, in which case you have my permission to do so.

Yours very truly,

CARL F. GOULD

Seattle, Wash., Oct. 11, '37.

(The second paragraph of Mr Gould's letter to Mr. Sturtevant follows.—Ed.)

"The diagramatic plan published is not the plan that was authorized by the Supervising Architects or by the Board. The perspective sketches detailing this plan incorrectly portray the plan as approved and adopted by the Supervising Architects and the Board. These incorrect drawings,

[Please turn to Page 14]

THE PRACTICE OF ARCHITECTURE

"The profession of architecture calls for men of integrity, of aesthetic and scientific skill, of practical proficiency and of executive ability and business capacity. The architect is entrusted with financial undertakings in which his honesty and purpose must be above suspicion and his competency beyond question. He acts as professional adviser to his client, designs his client's project, prepares the drawings, specifications and documents for the contracts between his client and contractors, and exercises quasi-judicial functions concerning those contracts. He has responsibilities to his professional associates and subordinates, to all engaged in the construction industry, and to the public. These duties and responsibilities he cannot discharge properly unless his integrity is beyond question, his advice disinterested, his decisions impartial, his documents clear, definite and complete, and unless his ability and conduct command respect and confidence in his community and his profession."

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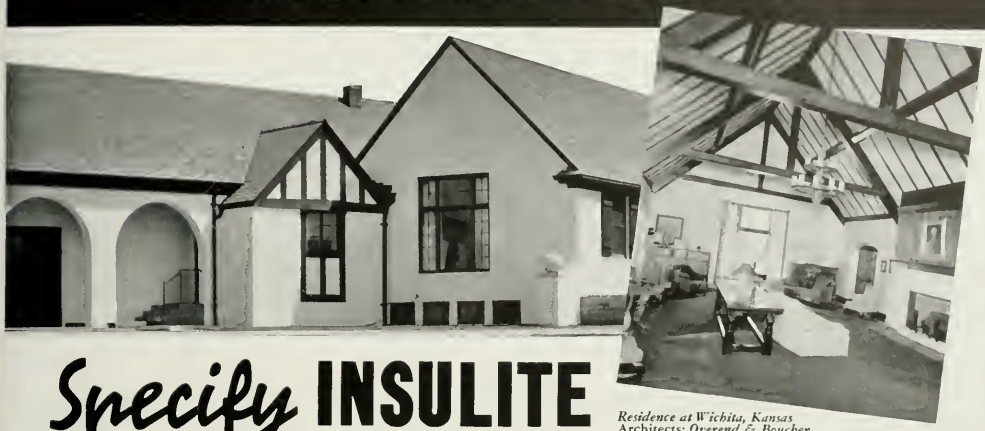

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[Continued from Page 12]

though presented by you to the Board were, you must know, never approved by them and their publication by you conveys to the public that the authorship of at least this portion of the plan is yours whereas in 1915 Bebb & Gould were authorized to and did prepare plans for the University of Washington Campus and the same were officially adopted by the Board. All subsequent modifications and minor changes therein were also made under the direction and supervision of Bebb & Gould and also have been officially approved. We have in our office the detailed and official plans of this section of the campus which could have been presented for publication months ago but such publication has been deferred until a later date when the executed work could be adequately shown."

MAYAN ARCHITECTURE

Dear Editor:

Architectural work is keeping me busy. Am developing an interesting group in reinforced concrete to cover about one acre of ground. Interesting to me is that the Maya motif is used throughout, but I believe of a greatly advanced nature over and above my previous efforts.

Still more interesting to me is the fact that my new book, "Atlantis, Mother of Empires," will very shortly make its appearance. Its unusual nature has caused an excessive amount of extra work on my part in assisting the publishers. Hence the lack of time for other duties. "Atlantis" is a fascinating story of the rise and fall of one of the oldest civilizations recorded; a history of the lost continent, with details as recovered from the civilizations of countries adjacent to it, where the survivors fled during the catastrophe that destroyed this continent.

This ancient civilization was so advanced that we are only beginning to realize the vast influence it played in what we term, the Ancient World. Monuments and records show a close relationship to Egyptian archaeology.

The book contains a four color frontispiece and one hundred and sixty-six illustrations that will prove valuable in understanding the history of this ancient people.

Kindest regards,

I remain Sincerely Yours,

ROBERT B. STACY-JUDD

Hollywood, Calif., Oct. 8, '37

EXECUTIVE

Because the clerical details of managing his personal estate were crowding his business hours, he has found it economical to turn this routine work over to our Agency Account service.

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PENNIES PAY FOR REPAIRS

if the flush valves are "Sloan"

Let's look at the record: On May 15 Hugo J. Stadick, Chief Engineer of the Loretto Hospital, New Ulm, Minn., wrote us "We have 22 valves installed an average time of 6 years and the cost per valve for the 6 year period has been 8c for parts."

Walter W. Bird, Chief Engineer of the Stevens Hotel, Chicago, the largest in the world, reports the cost per valve for maintaining 3600 valves for seven years to be 1½c a year.

At the State Hospital, Warm Springs, Montana, a total of $2 has been spent on repair parts for 100 valves in eight years, or a quarter of a cent a year per valve!

The Oxford Hotel, Denver, replaced other flush valves with Sloan in 1931. Nothing has been spent for upkeep since that time.

At 35 E. Wacker Drive in Chicago, an office building, the valves have been touched only once in eight years.

Kelly Brothers Company of Minneapolis report no repair cost whatever on their valves installed in December, 1930.

These reports are typical of the comments of Sloan users who keep a record of their maintenance expense. If you are not now enjoying the low-cost performance of Sloan Flush Valves, you can modernize your equipment at a substantial profit.

SLOAN VALVE CO., CHICAGO

Manufacturers of flush valves exclusively

Photo by Waters and Hainlin

RESIDENCE OF MRS. LESLIE F. HILL, KENTFIELD, CALIFORNIA
CARL F. GROMME, ARCHITECT

Some Unusual Homes in the Marin Hills of California

THE HOUSES shown herewith have been built in California's beautiful Marin hills, across the Golden Gate from San Francisco. Clearly planned by their architect, Carl F. Gromme, they offer their owners the advantage of scenic views beyond comparison. Strangely enough, in that informal setting, Mr. Gromme has put structures of rather formal character; but their vigorous, almost rugged treatment is by no means unhappy. In fact, many of the Colonial ancestors of the two principal houses were set on somewhat similar sites—the rock-bound shores and slopes of the Pilgrims—sheltered often by native trees of like size, if not of like species.

Here is a straightforward simplicity and an honest domestic feeling that is not too common in times of a feverish hunt for novelty. When these rather austere lines have been softened by vines and shrubbery and the kind touch of time, they should prove as pleasant homes for living as they are unquestionably American in character.

Floor plans are well studied for adaptation to sites, for convenient circulation; they are spacious and capacious. The most interesting scheme is perhaps that built by Mr. Gromme for himself, and which he has clothed in a more contemporaneous manner. It is a sturdy composition which appears to be a rational and frank development from the plan. Arrangements for ouutdoor living are admirable—terraces and steps and tree-shaded lawns combine attractively.

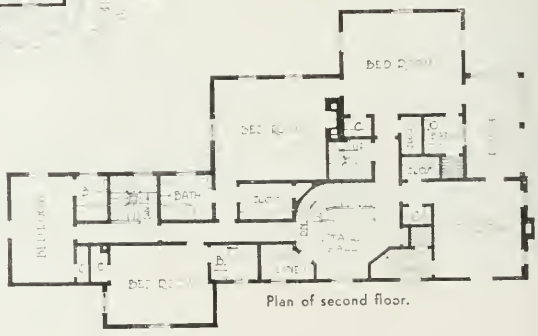
RESIDENCE OF MRS. LESLIE F. HILL, KENTFIELD, CALIFORNIA
CARL F. GROMME, ARCHITECT

Robert Watson, Builder

The New England atmosphere is reflected here in the residence of Mrs. Leslie F. Hill at Kentfield, California.

Carl F. Gromme, Architect.

First floor plan. Note living quarters well separated from kitchen, laundry, servant's room and garage, assuring owner the privacy of his family.



Plan of second floor.

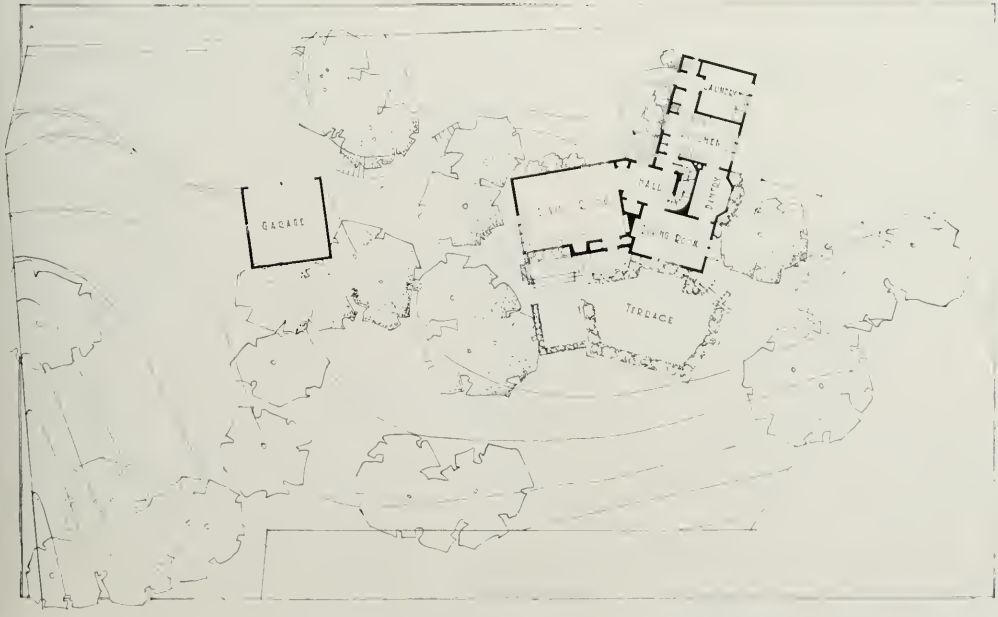
TWO INTERIOR VIEWS OF THE LESLIE F. HILL HOUSE AT KENTFIELD, MARIN COUNTY, CALIFORNIA. LEFT, THE LIVING ROOM; RIGHT, THE LIBRARY, FINISHED IN KNOTTED PINE. CARL F. GROMME, ARCHITECT

THE UNUSUAL WINDOW TREATMENT ACCENTUATES THE MODERN FEELING OF THIS COMFORTABLE LOOKING LIVING ROOM IN THE CARL F. GROMME HOUSE AT ROSS, MARIN COUNTY, CALIFORNIA.

SPREADING OAKS, FERNERIES AND SHRUBS LEND CHARM TO THIS PICTURE WHICH SHOWS DINING ROOM TERRACE IN THE FOREGROUND AND APPROACH TO THE MAIN ENTRANCE, RESIDENCE OF ARCHITECT CARL F. GROMME, ROSS, CALIFORNIA

ECOND FLOOR,
OF CARL F. GROMME

MT. TAMALPAIS FROM THE DINING ROOM WINDOW OF THE CARL F. GROMME RESIDENCE



PLOT PLAN AND FIRST FLOOR PLAN, RESIDENCE OF CARL F. GROMME, ROSS, MARIN COUNTY, CALIFORNIA

GARDEN VIEW, RESIDENCE OF CARL F. GROMME, ROSS, MARIN COUNTY, CALIFORNIA

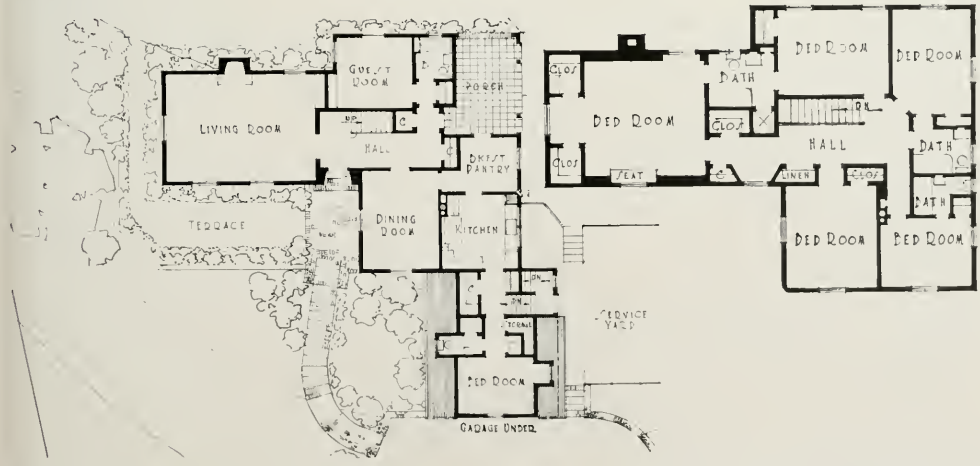
RESIDENCE OF CARL F. GROMME, ROSS, AS SEEN FROM THE TAMALPAIS SIDE . . . IN CHOOSING THE SITE, THE ARCHITECT REALIZED THAT THE NARROWNESS OF THE RIDGE AND ITS OPEN EXPOSURE, CALLED FOR FULL UTILIZATION OF ALL AVAILABLE SPACE, THEREBY ASSURING THE OCCUPANTS OF THE HOUSE AN UNOBSTRUCTED VIEW FROM EVERY ROOM.

Leibert and Trobock, Builders

HOUSE OF DR. AND MRS. M. E. HAZELTINE, KENTFIELD, CALIFORNIA
CARL F. GROMME, ARCHITECT

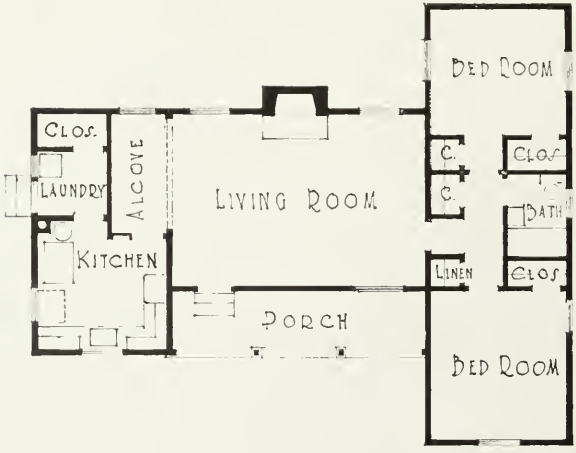
THE PLANS ON THE RIGHT HAVE THEIR ORIGIN IN THE EXIGENCIES OF THE SITE WHICH IS FAIRLY STEEP, DOTTED WITH LARGE OAKS AND LIMITED AS TO APPROACH. HERE AGAIN THE ARCHITECT HAS FOLLOWED THE NEW ENGLAND FEELING.

GARDEN VIEW, HOUSE OF DR. AND MRS. M. E. HAZELTINE, KENTFIELD
CARL F. GROMME, ARCHITECT



PLANS, HOUSE OF DR. AND MRS. M. E. HAZELTINE, KENTFIELD, CALIFORNIA

COTTAGE ON THE ESTATE OF MRS. J. C. KITTLE, ROSS, CALIFORNIA
CARL F. GROMME, ARCHITECT



THE PLAN

JUST WHAT DOES PROFESSIONAL REGISTRATION MEAN?

ARCHITECTS and Engineers concerned with professional licensure will find the following extracts of an address by Dr. Harlan H. Horner before the National Council of Architectural Registration Boards in Boston, both interesting and informative. Dr. Horner is assistant Commissioner for Higher Education of the State of New York in charge of the License Bureau.

After tracing the historical background of the New York State Educational Adminstrative agency which is responsible for professional licensure in that State, Dr. Horner stressed great importance to the fact that no system of professional education, professional licensure and registration, can long be successfully administered by any state administrative educational agency, unless it is kept free from political interference. Quoting Dr. Horner:

"In our architectural statute, originally enacted in 1910, the title of architect was set up but practice was not restricted to those earning the title. In later years the statute was amended to restrict the practice of architecture to those licensed by statute. A specific definition of what constitutes practice in the given profession is enacted in the law. If you will read the definition in engineering and architecture, you will see how fearfully and wonderfully laws are sometimes made.

"I want to talk particularly about engineering and architecture, because of the close relation of those two professions and because of the interesting experiences we have had in New York State in dealing with them in recent years. Our statute was first enacted in architecture in 1915, and in 1929 the practice was restricted to those licensed by the State. Our engineering statute, restricting the practice of engineering from the beginning, was enacted in 1920. Now, in 1929—eight years ago—the Legislature enacted a statute providing that after January 1, 1937 no one should be licensed as an architect in the State of New York who had not graduated from a registered school or college of architecture. In 1931 a similar enactment was made in the engineering statute, that after January 1, 1937 no professional engineer should be licensed who was not a graduate from a registered school or college of engineering.

"We are not always as conservative in making plans, but we certainly projected those plans reasonably in advance of their enforcement. I came to my present desk shortly after the statute was enacted in professional engineering and I began to ask myself what we should do to get ready for 1937. We have been rather busy at the job of getting ready throughout the last six or seven years. Well, I found an interesting situation, and no doubt it is perfectly familiar to you. When I began to look about among the engineers and the architects the first discovery that I made was that they weren't on speaking acquaintance in New York State. There was a sort of No Man's Land, which each profession claimed and which neither one dared to enter without carrying his artillery with him.

"I suppose, in our innocence, we attempted the impossible but we tackled that job. I must

make a long story short but let me say that the success that we had was due fundamentally to the caliber of the men on our examination boards in engineering and in architecture, who took a view of the whole situation which was broader and larger than that of either profession. I recall very well, when we first got the Boards together at a dinner meeting, we had no agenda because we did not know how to make one. I asked the two Boards to leave their pistols and their portfolios at the hotel, and they did. All we accomplished at the first meeting was to agree to meet again and as I look back upon that now, it was remarkable progress at the time. I think I have never publicly reported what happened after that. I secretly met with each Board separately before the second meeting came around and then I went on doing that for an entire year until the engineers and architects learned to put their feet under the same table and look across the table at one another without fever heat.

"Here is what happened. The architects and engineers compared notes and found that the State had recognized both their callings as learned professions, and had set up substantially the same requirements, quantitatively and qualitatively, for licenses to practice. These identical requirements, they found, included graduation from an approved college, eight years of experience, counting a year of college work as a year of experience, and the passing of a licensing examination. They also found the provision in each statute that the college requirements might be waived by a candidate presenting evidence of twelve years of satisfactory experience. They therefore said to themselves: 'Why are we at each other's throats? We have a common ground. Why can't we merge our interests?' Somebody came along with a proposal that the two professions commit themselves by statute to an agreement which would oblige each professional board to give an examination to cover No Man's Land. This examination is called structural planning and design. It is the keystone which supports and sustains the arch of our agreement and it is now written into the statutes. Here is what it means: It may terrify some of you as you think of your friends among the engineers. The literal truth is that now, under statute, any licensed architect may practice what we define in the statute as professional engineering, any range of it, if he can get a client, provided he does not hold himself out as a professional engineer. On the other hand, the licensed professional engineer may practice what we define as architecture, provided he does not hold himself out as an architect.

"In carrying out this plan we have to trust something to the good sense, the good taste and the good judgment of the engineer and the architect. We don't expect that every chemical engineer will go into home building, or that every architect will go into bridge building.

"There were other problems confronting the Education Department after the peace was made, because the statute in each case said that the college graduate, to be admitted to an examination after January 1, 1937, should come from an institution registered by the Education Department. That put a colossal task upon us because we did not have the instrumentalities or the agencies adequately to inspect the schools throughout the United States. We had applications, let me say, for registration from every degree-conferring institution of any standing in engineering and architecture in the United States. We were obliged to undertake the registration of curricula in engineering and architecture without the aid of any national accrediting agency. In the middle of our undertaking in engineering, we discovered that the engineers of the country were thinking about the same problem. As you know, they are now engaged through the Engineers' Council for Professional Development in establishing an approved list of engineering curricula for the entire country.

"The Education Department of the State of New York is obliged to deal with every college of engineering in America and it is earnestly anxious to have the aid of some extramural agency in determining what consti-

tutes a satisfactory course in engineering. The Engineers' Council for Professional Development promises to provide a list of curricula upon which we may in the future depend. Personally I hope to see the day when we shall be able to say to any engineering institution in America seeking approval of any particular curriculum, 'You will first have to secure the approval of the Engineers' Council for Professional Development.'

"I am going to venture to say that I believe architects could look with profit into what their fellow professional men in the field of engineering are doing now by way of establishing approved curricula in engineering.

"In the State of New York, we are just as much in need of some extramural agency for aiding us in determining what is a satisfactory course in architecture as we are in engineering. I venture the hope that the American Institute, the Association of Collegiate Schools of Architecture, and the Boards of Registration, will find a way of working together, as the engineers have, so as to give us a dependable list of courses in architecture upon which all the states may depend.

"God forbid that I should intimate that we in New York State want to see professional schools standardized, or made uniform. We do not care whether one school of architecture looks like the other or not if we can be assured that the institution is acceptable as a place for the academic and professional training of the future architect. Uniformity, no—standardization, no—but satisfactory accomplishment—yes. We hope that some agency will come forward to aid us in the establishment of our permament list of approved curricula in architecture.

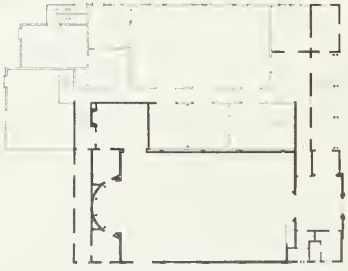
"Much depends in New York State upon continued co-operation between architects and professional engineers. I got a bit of a shock about ten days ago in attending a meeting of the New York State Society of Professional Engineers in New York City. I thought something was going to happen to disrupt the peace that we had made. Our distinguished Commissioner of Public Works in the State of New York, Col. Frederick Stuart Greene—and I use the word "distinguished" advisedly and kindly—addressed that meeting.

"First he took the architects of New York City, the State, and the country to task because of their general protest that competition should not be open to the entire profession for plans for a war memorial building which is contemplated in Albany. The Colonel paid his respects to the architectural profession in language which the stenotype will not record, therefore I will not utter it. Having taken care of the architects, he then entered into a comparison of engineering with medicine and law and relegated the doctors and the lawyers to the same group with the architects. I think I quote him exactly when I say that he said, 'There is no great constructive undertaking anywhere, bridge, skyscraper, tunnel, or building, that does not call for the guts, bones, fiber and sinew of an engineer.' Well I sat four chairs down the way and I almost committed the indiscretion of asking the Colonel a question while he was speaking. I wanted to ask him what that audience even of licensed engineers—it was largely that— would have thought of him if he, as an engineer, had appeared there with his guts, bones, fiber and sinew visible? The Almighty has something to do with these problems. He did a great job when He constructed the human frame. He employed both engineering and architecture. He enveloped the guts and the bones, the fiber and the sinew, with a covering that was presentable before other human beings.

"Our theory in New York State is that all professions have a right to live and that they somehow, under the law, let the other fellow live. We hope we can go forward with the peace that we have made and we hope that the architects and the engineers will always join in any great undertaking where the brains, as well as the bones and the sinews and the guts are desirable from every standpoint."

FUNERAL HOME OF
CHISHOLM AND DICKEY,
VALLEJO, CALIFORNIA,
BEFORE ALTERATIONS

FUNERAL HOME
AFTER ALTERATIONS
Frederick H. Reimers, Architect



PLAN AND INTERIOR OF CHAPEL,
FUNERAL HOME OF CHISHOLM AND DICKEY,
VALLEJO, CALIFORNIA
Frederick H. Reimers, Architect

PUBLIC LIBRARY,
TORRENCE,
LOS ANGELES
COUNTY,
CALIFORNIA
Walker and Eisen,
Architects

CIVIC AUDITORIUM, TORRENCE, CALIFORNIA
Walker and Eisen, Architects

The two buildings by Walker & Eisen, illustrated, have special engineering interest in that both structures are built of steel studs on a flat slab floor, steel joists roof framing, except auditorium, which has steel trusses and wood sheathing. Roofs are composition. All exteriors are plaster.

The Civic Auditorium, one of the buildings illustrated, was designed to meet the needs of a growing city. The sculpture is light-weight aggregate, precast and set in place before plastering.

The second building of the group is a public library which is being operated by the County of Los Angeles Library System. Note plaque over the entrance, symbolic of Knowledge and Research.

A MESSAGE TO ARCHITECTS

By CHARLES D. MAGINNIS, President A. I. A.

A CHANGING world is presenting novel and critical problems which demand the immediate study of the profession. We are not concerned here with those spiritual issues which so readily involve a cleavage of academic opinion. Taking it for granted that, in spite of assault architecture still retains its ancient validities, we are occupied only with the vital and realistic business of the place which it is to have in the new order, an interest which should engage the earnest thought of every architect in America. In the shifting conditions there is visible the opportunity to enlist the science of the architect to a new and more vital social purpose. We cannot hope that the significance of this opportunity will be more directly indicated to us by our American public. It must be clearly detected by ourselves, and the future position of our profession will largely depend upon the intelligence and address with which we meet it.

In our modern society, architecture has had only a limited beneficence. The statement is familiar that only a tenth of our building is architecturally literate, with the consequence that our typical community may claim some proud oasis of beauty, but is preponderantly ugly and incoherent so as to invite question whether the measure of our culture is the one condition or the other. That the profession is, to this degree, ineffectual has always been deplored, but it has been too easily accepted as a condition beyond hope of intrinsic remedy.

Must the architect be satisfied to be considered an instrument of the rich? We know that in the past, and under political systems less admirable than ours, architecture was not estranged from the humbler life of society. Obvious economic difficulties have accounted in the past for the detachment of the profession from this neglected enterprise. But considerations of social justice are now moving us to a more conscious feeling for the less favored of society. Under the initiative of government a promising beginning has been made in a great program of small housing under responsible architectural control. Other agencies are cooperating which are notably less sensitive to the need of professional direction. It is of vital importance to our profession and at the same time an obligation of enlightened patriotism, that our relation to this great developing interest be securely and permanently established. Our able Committee on Housing will study the means by which the profession, under the guidance of The Institute, may adjust itself effectively to service in this new and extensive field.

As we seek to extend the boundaries of our profession in this direction, however, we are warned of a conflicting movement which threatens seriously to limit it. This is the extension of the bureaucratic idea. So far we have confronted this issue only in our relation to the Federal Government. We must now prepare ourselves to meet the aggravating problem in our very midst. Legislation has been twice attempted in New York State, and actually accomplished in Connecticut, which embodies the principle that architecture can serve the public interest adequately through the incorporation of architects and draughtsmen in the general organization of public works. The implications of this menace are so unmistakable and so clearly to be combatted only by local action that a large responsibility must be perceived to rest on all the Chapters of The Institute.

It would be highly agreeable to the conservative spirit of the profession if its social value needed no aid of propaganda. But in these articulate days so many interests of no less conservative habit are clamoring for the public consciousness that, if we are even to hold our present place, we have need to make the world more aware of us. A new approach to this important concern is being made by the reconstituted Committee on Public Information of the A. I. A., with a view to such a program of publicity along educational lines as shall be worthy of the best Institute ideals and adequate at the same time to the high opportunity which modern life is presenting to the profession.

UNDERSTAND THE ARCHITECT — AND YOU CAN SELL HIM

By Marsh K. Powers in Sales Management

IT IS a safe assertion that, of all men in American business, the architect is one of the least understood—even among those who seek his patronage.

I have heard sales managers say: "Architects are temperamental"; "Architects won't take time to listen"; "They're prima donnas —you can't deal with them reasonably"; "Don't waste time on the architect—get to his client—he's the only man who counts"—even down to "Architects don't know anything about our kind of product, and what's more, they don't want to know anything about it."

Whenever a sales manager feels that way, it is not surprising that his men enter architectural offices with unconcealed chips on their shoulders and make a sorry failure of the architectural market.

It is axiomatic of selling that you can't sell much merchandise to people toward whom you are antagonistic. If you don't like architects, don't try to sell them and don't ask your salesmen to call on them. If, however, you seek their patronage, be sure your salesmen have a thorough understanding of the controlling facts which differentiate architects from other prospects, so they may approach them intelligently.

In general averages it is true that the architect is half artist and half business man. The artistic viewpoint may seem to you the trait that makes him a difficult prospect. Admit, however, that it is imperative to the success of an architectural firm that artistry be well represented in its make-up.

Recognize, also, that any architect who succeeds in building up a sizable and consistent volume of business deserves the respect of any business man, in that he has met and mastered a peculiarly complex managerial problem.

An architect must provide an adequate office, maintain a sufficient staff, originate and produce sound plans and attractive designs, maintain contact with clients on work under construction, perform a complicated buying function and an equally complex superintendence function, keep informed of new trends in design, construction, materials and treatments, squeeze out time somewhere in which to influence new assignments into his office, and continuously keep such an eagle eye on his costs that he can accomplish all the foregoing within a fixed and narrow margin, usually 6 per cent of the cost of the work entrusted to him—the sum total constituting a big league problem in business management.

In the large metropolitan offices, where the most important projects are handled, the various functions are divided and allotted to specific individuals. In such offices the material or equipment salesman many never reach or see a member of the firm. Instead, he will see the firm's specialist on his particular subject, so nothing is lost, as he is talking to a responsible individual.

Of the approximately eight thousand active architectural offices in the United States only a few rank in the foregoing classification. The great bulk, in point of numbers, is made up of those in which the principals are active in all phases of the work, or in which one partner is responsible for the artistic performance of the office, another for engineering and technical superintendence and a third for organization, management and new business.

Take the progress of a small project through a one-man office. The job, we will say, is an

office building for a factory, to cost $40,000 —architect's income (gross) $2,400.

What does he do for this money?

Well, first, it costs him something in personal time to get the business, and perhaps something more in the way of club dues, civic or social activity or other form of "selling overhead."

Thereafter he must familiarize himself with all the requirements of his assignment. Then he must draw up initial plans and elevations and get them approved, perhaps in the face of a building committee representing as many conflicting opinions as it has members. After that he must prepare complete specifications and detail drawings, call in contractors, supply them with copies of the blueprints and specifications, and, after a few days, receive their bids.

All through the construction period he must superintend and scrutinize the various contractors' performances. He must keep a running check-up of costs in order to be able to approve the contractors' "estimates" for his client to pay. In addition, he may need to hold two or three conferences a week with his client.

If the preliminary period is covered in two months and erection is accomplished in four more, he receives the munificent remuneration of $92 a week for his services, most of which, of course, goes to meet his fixed overhead and organization expenses.

If, however, the $40,000 job represents a residence, the proposition looks even less alluring because it quite probably entails working for a client who cannot read blueprints, knows sufficiently little about architecture to desire impossible accomplishments, and fusses and frets about the progress of construction from day to day.

Obviously, an architect is a busy man. In the face of his need for saving time do not expect him to put his feet up on the table for a cozy session of an hour or two whenever a salesman wants to see him nor admit the salesman who tries to crash his gate outside of the hours allotted to interviews.

His success rests on handling plenty of work efficiently.

For that reason he can't give valuable hours to inducing his client to make this or that change from the original specifications. Even if it is an "extra," his additional compensation will rarely pay him for the time involved.

In busy times he is naturally reluctant to study a material or piece of equipment which he may have no occasion to specify until some day in the very indefinite future.

He can't risk specifying materials or equipment about which he has the slightest doubt, so long as there are comparable items which his own experience has found satisfactory. In the first place, the untried item necessitates a new study and investigation; in the second, he can't afford to have his time taken up by clients' complaints after jobs are completed. There is little inducement to him to pioneer for pioneering's sake.

Second in importance to recognizing architects' need for conserving time, a salesman must keep in mind that an architect is spending other people's money. I have known salesmen who felt that this should automatically encourage carelessly decided expenditures and proceed accordingly in their solicitations. Quite the opposite is true.

An architect can logically approve a new device or material in theory, yet decline to specify it until it has demonstrated its dependability elsewhere. If it were his own money he were spending, he could feel free to gamble it on a new article. Since it isn't, he must play safe and decline the responsibility. Obviously, this handicaps the salesman of a new commodity and is the inspiration for much of the criticism that "architects aren't interested in new improvements—you've got to sell the owners."

To an architect each item in a structure is, properly, only an accessory part to the completed whole. It is the finished structure in which he is interested. He cannot be expected to wax excited over each of its multitudiness ingredients.

SAN FRANCISCO
PUBLIC LIBRARY
PERIODICAL DEPT.

For two types of commodities he will fight long and hard—those that affect the **appearance** of the finished building and those in which a wrong selection will endanger **permanence.** On the pleasing appearance of the buildings he designs depends his professional reputation in his community—his principal source of new business. On lasting client-satisfaction—permanence—depends whether the job in hand will represent a true profit to him or whether his paper profit will be eaten up by the later cost of straightening out complaints.

On all commodities outside of these two classifications he is normally amenable to argument, though he quite naturally tends to specify whose materials or brands will be accepted without question by his client. That is why he is influenced by the public reputations of brand names. The better known they are the less explaining they need, and the specifications "stick" without argument as originally written. Moreover, if unexpected trouble develops, the maker or contractor is blamed—not the specification.

After a few favorable experiences with a particular specification an architect is in a frame of mind to include it on every job where it is logical. He can convincingly justify it to his client by first-hand examples—not by mere hearsay. It then stands a good chance to become a "standard specification" in his office and no longer needs a salesman's aggressive efforts to secure its inclusion.

To the mind of the salesman of a competitive article this can constitute injustice, bullheadedness and several other uncomplimentary things, especially if his own commodity is actually "just as good," and perhaps a few cents lower in price. Hair-splitting differences in possible quality or relatively insignificant discrepancies in price cannot always be of interest to an architect. Far more important is the assurance of satisfaction which is based on past experience.

I have known salesmen to criticize architects as "weak-kneed" who have let a client change a specification. Analyze such criticism and you will find that the majority apply to items which affected neither the appearance nor permanence of the finished structure. Clearly, this is only sound policy on the architect's part. The change will not affect his public reputation. Furthermore, the owner, when he makes such a change, lifts from the architect's shoulders the responsibility for the performance of the substituted item. (Some architects expressly, and in writing, waive all responsibility for a specification changed by a client.) When an architect overrides his client's preference, it is only human nature on the latter's part to look for a chance to say, "I told you so!"

A criticism frequently heard is that "architects don't know half as much as they pretend to know about . . ." (here insert the name of the particular specialty in which the critic is interested).

It is perfectly normal that a salesman who concentrates on a single specialty, such as heat control, or ventilating ducts, or steel sash, or insulation, or any one of a score of other subjects, can amass a greater store of specialized lore than will an architect to whom it is only one out of a host of equally important interests.

Instead of regarding this as a shortcoming on the architect's part which handicaps sales-effort, a well-informed salesman can properly regard it as affording him a fortunate opportunity. An architect need not become an expert on every detail if, instead, he can develop completely dependable sources of information for which he can serve as a focus point in his client's interests.

In the qualification "completely dependable" lies the opportunity for the authoritatively informed salesman.

The salesman who is qualified in training and experience to serve as consultant and does not betray the responsibility in favor of his selfish interests can win and maintain an enviable entree.

Obviously, it takes time to build a reputation for this type of service just as, later, it takes time to render it. It takes time on the selling end and it should take additional time. after each sale, to check the actual installation

on the job and, in the case of many items, actual performance after occupancy. The salesman intent on getting, never giving, is not entitled to berate the architect who ignores his brand in favor of one which, in contrast, is sold and installed "with service."

A great part of the foregoing, if boiled down, comes to this—an architect is not a buyer in the ordinary sense, but is, fundamentally, a **reseller.**

In the sense that he decides millions of dollars of orders a year he is a buyer. In the sense that he must justify his selections to a third party he is a dealer or distributor and is just as awake to the "consumer acceptance," or lack of it, in an article as any retailer or wholesaler. A salesman who clearly recognizes this, and realizes why it is so, is necessarily going to approach architects in a different manner and with more success than the man who tries hammer-and-tongs methods.

The architectural market is a field in which the high-pressure, once-over, close-on-the-first-call salesman is rarely successful. Canned sales-talks are resented. The architect does not want to be sold. What he wants is the facts on which to make buying comparisons and he prefers those facts unadorned with sales-embroidery. The architectural field, therefore, is not well suited to the so-called "go-getter," but calls for the salesman with patience, tact and a sincere desire to be helpful, particularly when that spirit of helpfulness is directed by an intelligent and sympathetic understanding of how an architect does his business. "Know your stuff, but make it snappy," is a sound platform.

Architects are human.

Under this sometimes puzzling artistic exterior they have all the human virtues and failings. Per working hour they are probably called upon for a greater expenditure of nervous energy than are executives in most other lines of business, a fact that is desirable to remember when dealing with them. We all of us respond to the fellow who shows by his comments, his actions and his whole behavior that he understands and appreciates our problems, our difficulties and our goals, and so do they.

A successful salesman of heating system equipment told me the following personal experience which aptly illustrates in a single incident many of the points covered in the preceding paragraphs. It is not meant to apply to all products which enter into construction work. Mr. and Mrs. Consumer show but little interest, for example, in the brand names of building products that are hidden in the completed building.

His employer was a manufacturer of equipment adapted only to large structures — schools, hospitals, hotels, etc.—and had built up a valuable prestige in the field. In the hope of capitalizing this good will in a wider market, he added residence equipment to his line.

Nevertheless, it proved a flat failure so far as he was concerned.

The harder he worked the less headway he seemed to make. He was rapidly getting himself into the desperate frame of mind in which he blamed his lack of results on unfair competition, architectural stupidity and every other alibi not reflecting on himself or his product. His failure was affecting the quality of his solicitations. His manner was becoming critical and pugnacious.

One day he pulled himself up short and decided to take his case to some architect and ask for a frank explanation. He chose a firm in which one partner was a personal friend socially, outside of the office, the other a fellow-member of the same college fraternity and chapter.

He fortunately approached them at a time when both could see him. They listened carefully and then one of them spoke out frankly.

"Bill, we don't doubt for one minute your quality and we like your prices—but that isn't the whole consideration. If we specified your make, we would first have to take an hour or so to explain it to a client and convince him that we were justified in our selection of a comparatively untried article. In the second place, should anything happen to go wrong

[Please turn to Page 46]

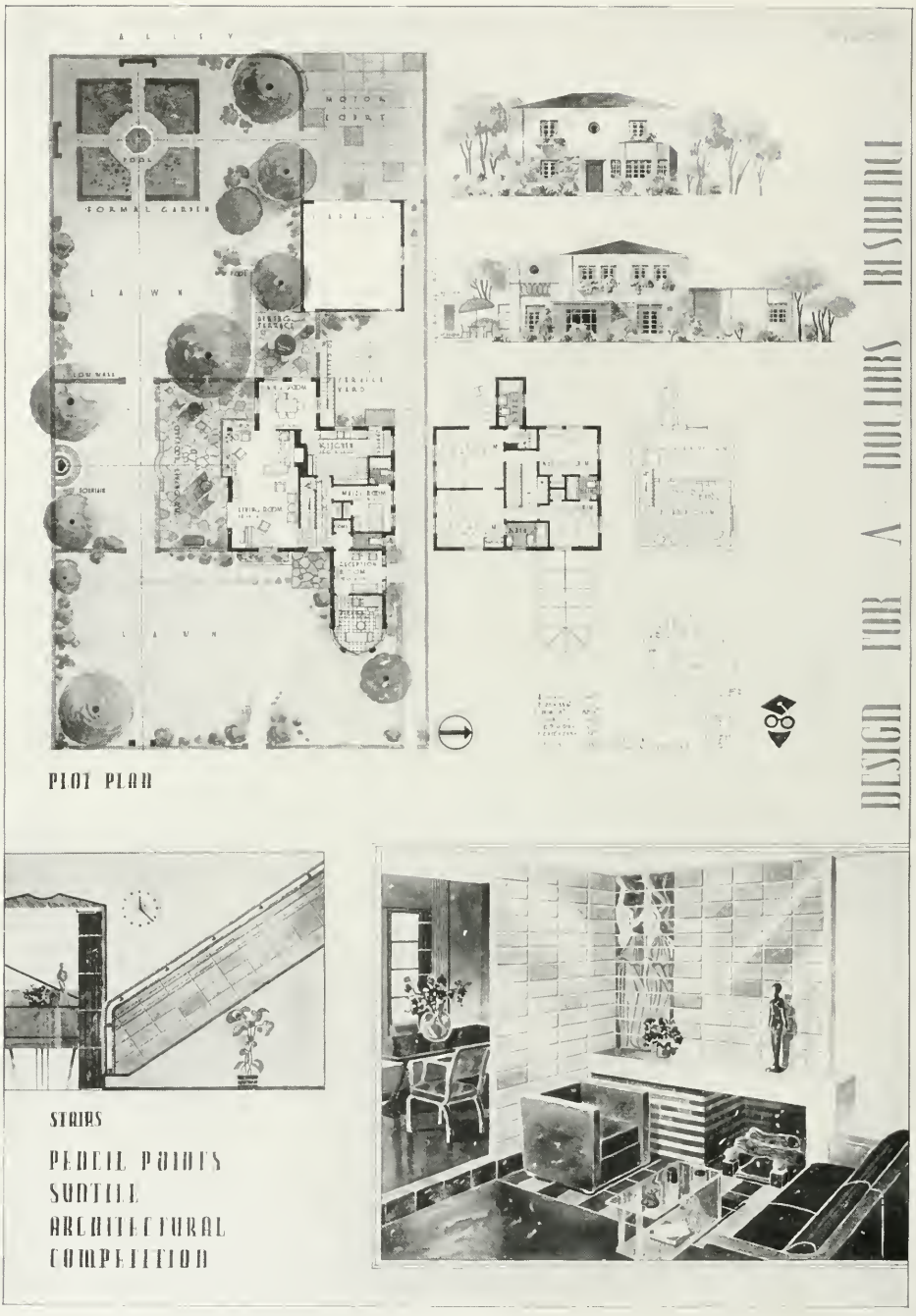
ARCHITECTURAL COMPETITION FOR A DOCTOR'S RESIDENCE

RECENTLY "Pencil Points" conducted a "Suntile" architectural competition. There were 347 drawings submitted, of which 35 were eliminated from judgment because they did not conform to the mandatory requirements of the program.

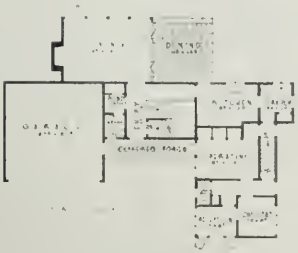
The program contained certain descriptions which called for the design not merely of a residence, but of a doctor's residence. Instead of the enumeration of rooms with exact sizes, the program assumed that the architect was made acquainted with the kind of life the doctor and his family lived. The competitor was furthermore privileged to select the section of country where his house would be built. The only limitations as to the solution were the size of the plot, its topography, orientation, and the location of the main thoroughfare and rear alley. A special consideration was involved in the suggestion that the use of decorative tile was desired.

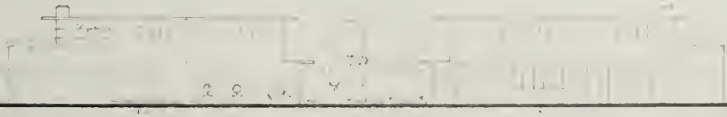
First prize was awarded to Hays, Simpson & Hunsicker, an Eastern firm of architects.

California architects received their share of recognition, third prize going to Robert J. Mayer and Kazumi Adachi of Los Angeles; fourth prize to Ben H. Southland, also of Los Angeles, and mentions to Harold Nicolais, Los Angeles. Whitney R. Smith, Pasadena, Elmer Grey, Pasadena and Edward Killingsworth of Long Beach. Full-page plates of the California designs awarded Mentions appear on succeeding pages. The third and fourth prize winners, both from California, will be published next month.



SUBMITTED BY HAROLD NICOLAIS, 4070 SO. NORMANDIE, LOS ANGELES, CALIFORNIA

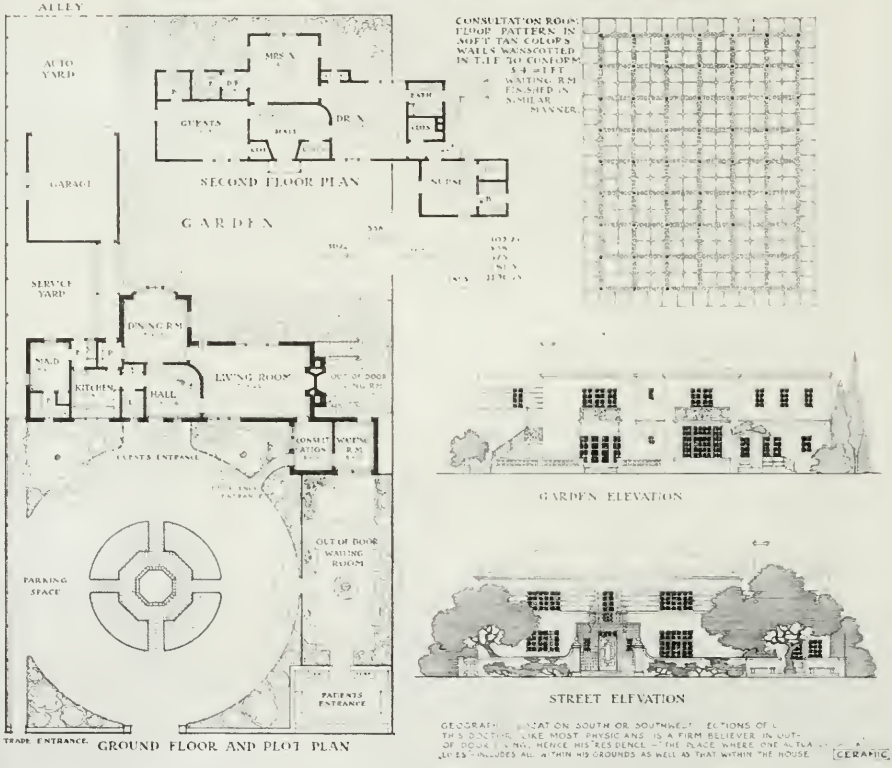




DESIGN FOR A DOCTOR'S RESIDENCE IN SOUTHERN CALIFORNIA

Pencil Points-Suntile Architectural Competition

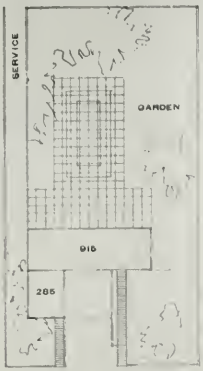
SUBMITTED BY WHITNEY R. SMITH, 201 BEACON STREET, SO. PASADENA, CALIFORNIA



A DESIGN FOR A DOCTOR'S RESIDENCE

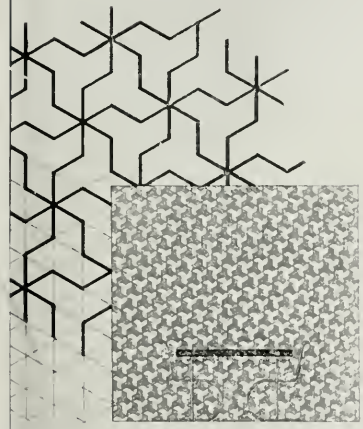
PENCIL POINTS-SUNTILE ARCHITECTURAL COMPETITION

SUBMITTED BY ELMER GREY, 170 E. CALIFORNIA STREET, PASADENA, CALIFORNIA

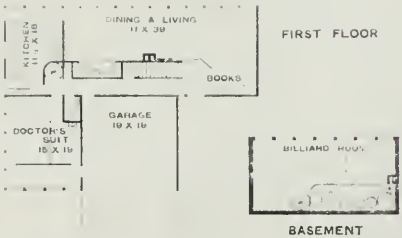


PLOT PLAN

LOCATION
CALIFORNIA



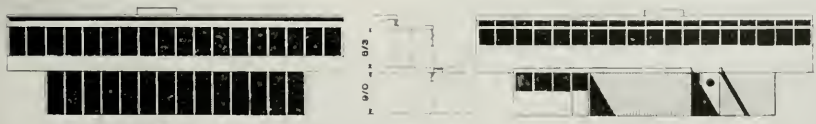
SOUTH DINING ROOM WALL



FIRST FLOOR

BASEMENT

SECOND FLOOR



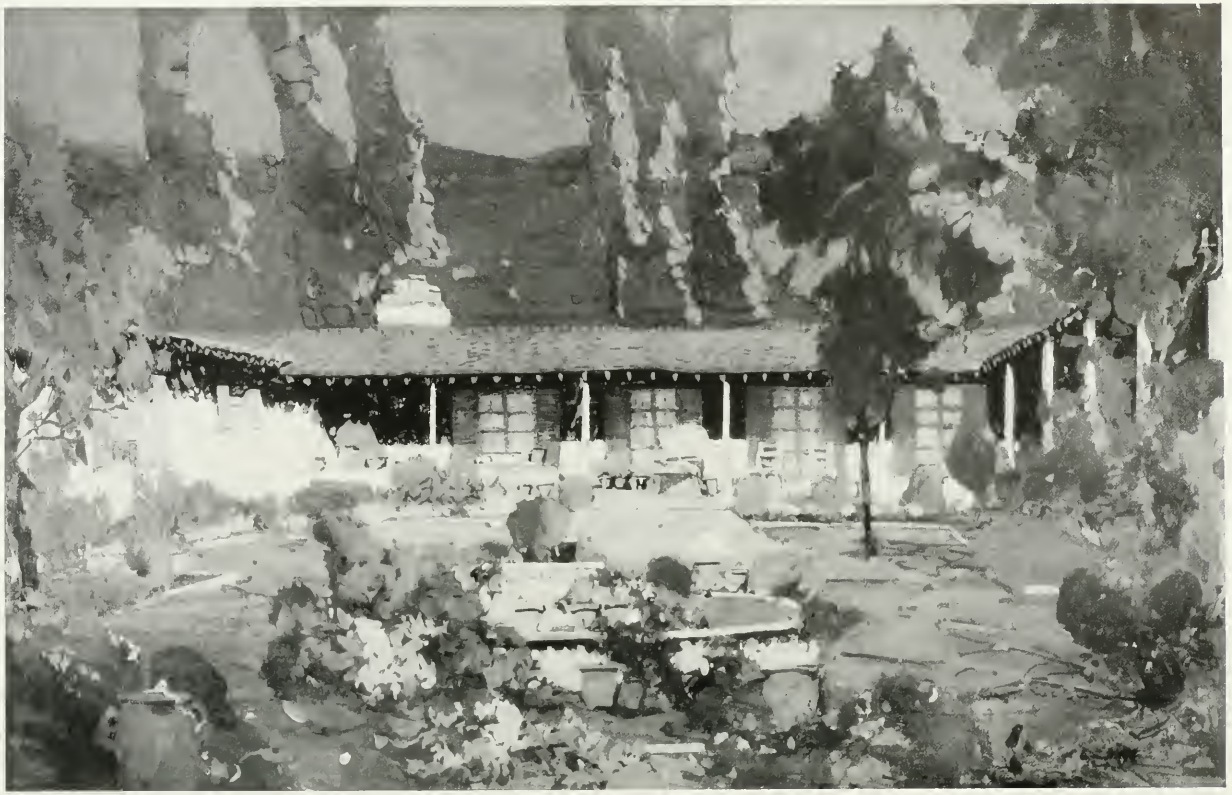
WEST ELEVATION

EAST ELEVATION

DESIGN FOR A DOCTOR'S RESIDENCE

PENCIL POINTS-SUNTILE ARCHITECTURAL COMPETITION

SUBMITTED BY ARNE KARTWOLD, 1552 SONOMA AVENUE, BERKELEY, CALIFORNIA



DESIGN FOR A COUNTRY HOUSE IN THE MOUNTAINS

Universities Broaden Scope of Training in Landscape Design

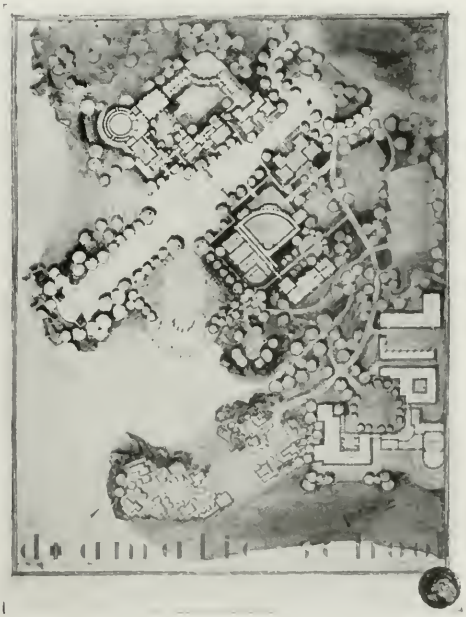
By John W. Gregg

IT MAY not be generally known that for nearly a quarter of a century there has been available at the University of California at Berkeley, a four year course of professional instruction in the field of landscape design. The curriculum is so arranged as to furnish technical instruction for those wishing to prepare themselves for the practice of landscape architecture, which today is generally recognized as one of the fine arts of design involving the solution of problems dealing with the practical and esthetic treatment of ground forms and all natural elements as they influence the development of modern civic and human life.

In the process of the development of mankind there has been noticeable a constantly increasing tendency toward differentiation and specialization, each step in the process being a slow one and, as a rule, taken at first by some individual or group originally trained in some other field. In this way have come about many new forms or fields of work, each adapted more or less from others which, as civic life progressed, proved to be inadequate in the solutions of newer and more complex problems. Each new profession or branch from an older one demanded and received a new cognomen. This process of differentiation has developed more or less clearly defined groups of men and women as, for example, the different specialized fields of engineering, medicine, etc. This is exactly what has taken place in the formation of what is now generally accepted as a distinct profession and art of design in landscape composition.

It is apparently difficult for some people to realize the possibility or need of any design in the handling of ground forms in relation to natural or man-made elements thereon. Landscape gardening is the older and more familiar term to many and implies only a reasonable familiarity with ornamental plants and their culture. In other words, many people are now more "plant minded" than "design minded."

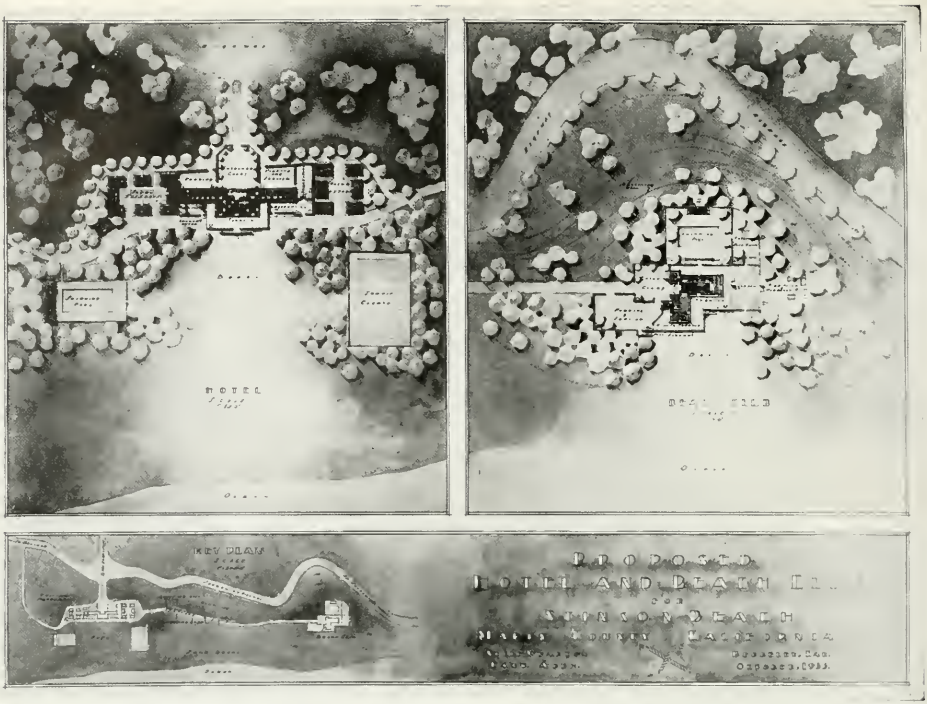
Today the professionally trained landscape architect has spent from four to seven years in



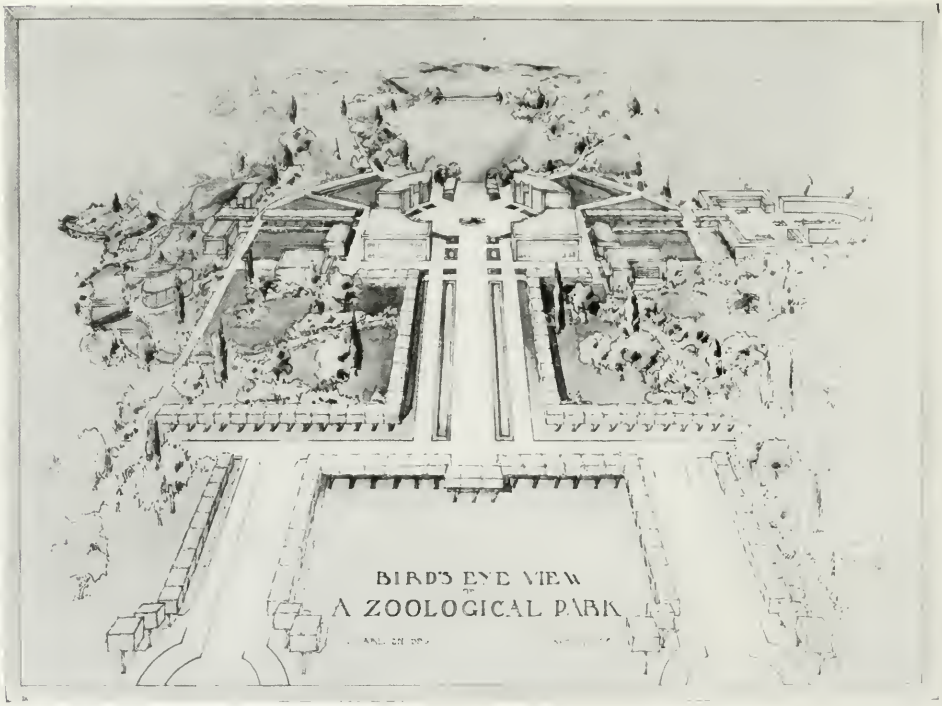
DRAMATIC SCHOOL, a Prix de Rome Problem, rendered by Fran Violich, Graduate Division of Landscape Design, University of California, Berkeley.

Each year the American Academy in Rome offers a Scholarship in Landscape Architecture to students of accredited schools in America.

EDITOR'S NOTE—Professor Gregg is head of the Department of Landscape Design, University of California, and member of the American Society of Landscape Architects.



Recent development in landscape architecture indicates a decided trend toward public projects. In anticipation of extended public practice, students studying landscape composition are encouraged to present plans as illustrated in the rendering above.



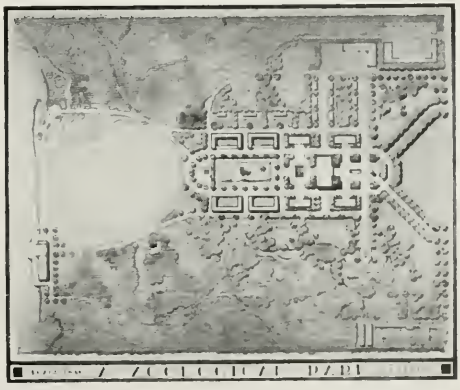
Simple renderings in various media are presented by students throughout Landscape Design courses.

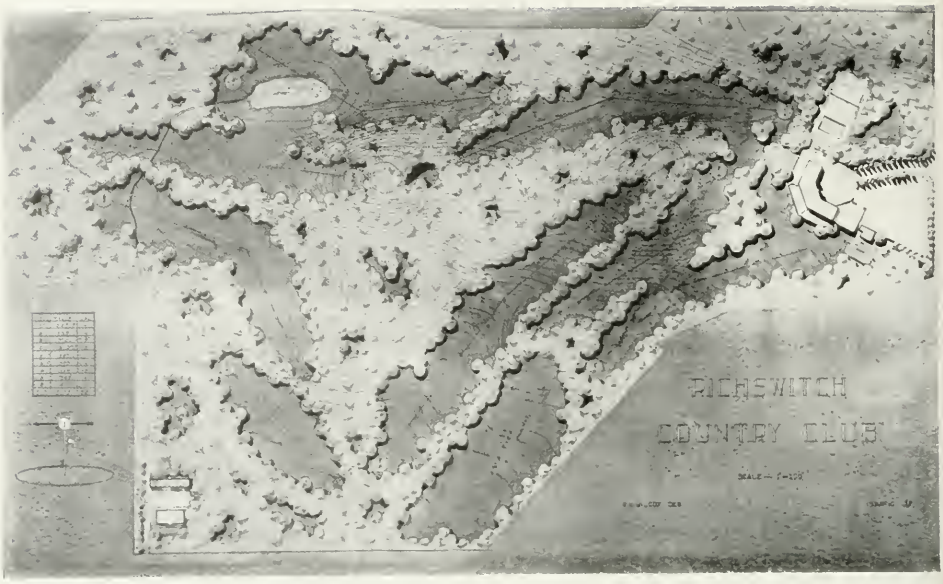
collegiate study which has involved the fields of architecture, engineering, general art, mathematics, botany, geology, and other closely allied arts and sciences in addition to the subject matter in his own specialized field. The landscape architect is not a narrowly-educated individual as might be expected of one engaged in a highly specialized field. He or she is a cultured citizen, a leader in the civic life of the community and nation, "an improver of the homes of men."

Many people continue to think of landscape architecture in terms of landscaping gardening, which in turn seems to imply the development of the small home grounds or the back yard into a so-called "garden." Let us be reminded, however, of the part landscape architecture has played and will continue to play in the development of such compositions as World's Fairs, City, County, State and National Parks, Institution Grounds such as schools, colleges, universities, hospitals, state and county "Homes" of various kinds, country clubs, botanical gardens and arborita, park-cemeteries, large private estates, recreational planning in our National Parks and National Forests and even real estate sub-division design and city planning. All of these phases of planning call for the services of a technically-trained landscape architect—one possessed of imagination, creative ability, and an apprecia-

PERSPECTIVE SKETCH OF A ZOOLOGICAL PARK BY J. LEFLIN, DIVISION OF LANDSCAPE DESIGN, UNIVERSITY OF CALIFORNIA, BERKELEY

Relation of Planting to Structures may be presented best by a simple perspective, as illustrated in the pencil and crayon drawing.





GOLF COURSE AND COUNTRY CLUB, BY RICHARD K. WILCOX, DIVISION OF LANDSCAPE DESIGN, UNIVERSITY OF CALIFORNIA, BERKELEY

The relationship of group plantings to fairways, greens and topography was studied in the above problem.

tion of the practical and esthetic factors involved in the correct solution of all problems where other allied arts such as architecture, sculpture and even interior decorative design are concerned. It is the composition as a whole which must function esthetically and practically, and satisfactory results can only be obtained through close co-operation of the best artists in all lines of artistic practice.

Members of the American Society of Landscape Architects are filling responsible positions in civic and governmental departments as well as engaging in successful private practice.

UNDERSTAND THE ARCHITECT

[Concluded from Page 36]

with the installation in the next few years, he would blame us for forcing it on him, even though his faulty operation of it caused the trouble. And in the third place, should he ever want to sell his house, your equipment, to be brutally frank, would be a liability unless your concern makes its name better known to the general public.

"Put yourself in our shoes.

"There's no engineering problem in your new line where you can help us in the same way you do on the other.

"The make we are specifying is well known. A client may know nothing about its technicalities, but he is satisfied because he is getting a popular, standard article. We don't have to spend any time in arguing for it. If anything goes wrong with it, he doesn't blame us—he doesn't even let us know, but kicks direct to the manufacturer or the contractor.

"Let's admit that your product is just exactly as good—even then your client wouldn't benefit. For the sake of saving a few dollars at the outset he would endanger his resale value. So, frankly, do you blame us?—are we as bad as you have probably been painting us?"

And the salesman was equally frank.

He said, "No."

Venetian Blinds—as Old as Antiquity—as Modern as Today

By M. C. Israel

THE origin of the so-called "Venetian" blind is quite vague. From what limited subject literature there is obtainable, we can be reasonably certain that a primitive type of louvre blind was used by the ancient civilizations many centuries B. C. In a sketchy manner, the following notes, gleaned from medieval and modern writings, appear to be reasonably correct:

Marco Polo, that intrepid Venetian adventurer, traveled through Ancient Cathay and the Far East about 1250 A. D. In his writings, he makes mention of seeing "an ingenious device for fenestration which is used in many dwellings by rich and poor alike." The description of this "ingenious device," although crude and cumbersome, nevertheless, unmistakably depicts the same principle as is employed in the modern Venetian blind. Marco Polo was so impressed with their commercial possibilities that he brought back several "bindles" of these devices to his native Venice. There appears no evidence of general usage of Venetian blinds in Europe until about the year 1500. While visiting Spain, King Francis I of France rediscovered these "blinds" and immediately brought them back to France. Frenchmen named these "devices" "jalousies" (which means jealous or jealousy). It appears that these Venetian blinds were used in the palaces and homes of the nobility to close in the open porticoes. This so aroused the village gossips, whose prying eyes were cheated by the new blinds, that they became known throughout France as "jalousies," which to this day is the French word for Venetian blinds.

Some years later, in the early sixteenth century, King Francis, in negotiating a hostage agreement, traveled to Venice with these "jalousies." Before long the palaces of the Doges of Venice were gay and resplendent with these colorful and useful blinds. They were crude and difficult to manipulate, but highly ornate with gold leaf and jewels. After this reintroduction to Venice they came into more general use, and the Venetians undoubtedly contributed some improvements and refinements to these blinds. As they became increasingly popular in Southern Europe, they earned the somewhat doubtful title of Venetian blinds.

That the Spaniards introduced the Venetian blind to the Americas is unquestioned. All through the Latin countries of South and Central America, where the Spaniard left his indelible mark on architecture, we find a wide usage of Venetian blinds. This Spanish influence traveling northward through Mexico into Southern United States, reaches up the Atlantic coast into New England. During the early days of the Colonists we find considerable evidence of the use of Venetian blinds. All the windows of the prim little New England homes had their green and white "shutters."

In France, Italy, Belgium, England, Sweden and other European countries Venetian blinds have been in use for hundreds of years, but they were very slow to gain popularity in the

United States. Except for schools and office windows, Venetian blinds were seldom employed in American architecture, and that only for the past 25 years.

Slowly but definitely our architects and interior decorators have come to recognize the manifold advantages of Venetian blinds. It is through their efforts and endorsements that the modern Venetian blind has evolved into its well deserved acceptance and popularity. As recently as ten years ago the limited production of Venetian blinds and the attendant cost restricted their use to the high income groups. Today greater production has lowered costs until Venetian blinds are within the buying range of the moderate income.

Venetian blinds are no longer a luxury for the fortunate few. They have now received national approval, not only as colorful and decorative window treatment, but as a positive essential. Today Venetian blinds are on the "must" list of every housing program. "As old as antiquity and as modern as tomorrow" is indeed aptly descriptive of the Venetian blind.

Venetian blinds have a three-fold appeal to the hotel and apartment management, viz., beauty, utility and economy. "Prospects," being shown through apartments with Venetian blinds, are always influenced by the cool restfulness of the room. Apartments are easier to rent and stay rented longer because of blinds. How often one hears the phrase, "Why, these blinds really 'make' the room!" But beauty is not the only concern of the Venetian blind buyer. Utility and economy should be built into the purchase price. Briefly, the apartment or any income property buyer should insist that his blinds be better than "just blinds." A good blind should be and is a good investment, because the materials and workmanship are of good quality and will give many years of fine service. A few essentials in the making of a Venetian blind are as follows:

First, all the wood parts, i. e., slats and rails, should be of selected kiln dried Port Orford white cedar. Port Orford white cedar grows in Southern Oregon and is peculiarly adaptable to Venetian blinds because of its non-warping properties. It is flexible and tough, smooth grained and takes a fine finish.

The ladder tapes, which carry the slats and function in opening and closing the blind, should be of fine cotton and linen and of precise spacing and weaving. This is highly important. For over a century, English mills have excelled in ladder tape weaving. Although domestic material is now obtainable, and showing steady improvement, the trade generally concedes superiority to the British product.

The operating hardware should be of especially sturdy type and fool-proof. Smooth worm gear and bead chain tilting and positive action cord locks are imperative. Other important specifications which the discerning architect should insist upon in specifying Venetian blinds are hollow braided cord, ball bearing pulleys, friction free tilting rails and heat treated, oil enamel finish. There can be no minimizing the importance of quality Venetian blinds, especially for apartments, hotels and income properties.

Are Venetian blinds a fad or are they here to stay? To the old-timer of the Venetian blind industry the answer is easy. "Quality Venetian blinds are here to stay." Why? Because good blinds do more things for the room than can be achieved with any other window equipment. They give touch controlled, soft, indirect light, no-draft ventilation and privacy. They are dignified, decorative and modern. People who have used Venetian blinds will tell you that they will never be satisfied without them. For the past twenty years a university expert on natural illumination completes the academic year with a thesis on daylight control. Each year he concludes his paper by stating his opinion "that, for fullest efficiency of daylight control and ventilation, no window equipment on the market can equal the Venetian blind."

With the Architects

OAKLAND MAUSOLEUM

Plans have been completed by Architect Henry A. Minton of San Francisco, for a columbarium and mausoleum to cost $60,000 for the First Hebrew Congregation of Oakland.

WAREHOUSE ADDITION

Plans are being prepared in the office of W. D. Peugh, San Francisco, for an addition to the office and warehouse of William Voelker & Company, on Howard Street, between Second and Hawthorne, San Francisco.

GRAMMAR SCHOOL BUILDING

The Merquin Grammar School District has had plans prepared by Architect Charles S. Dean of Sacramento for a six-classroom frame and stucco grammar school building at Stevenson, Merced County, to cost $40,000. This is a P.W.A. project.

PRINTING PLANT

Plans have been completed by William E. Milwain, 1593 Oakland Avenue, Oakland, for a one-story brick printing plant to be built on the south side of 21st Street, near Telegraph Avenue, Oakland, for Printing Plates Incorporated.

CITY HALL AND JAIL

From plans by Architects Dragon & Schmidts of Berkeley, a city hall and jail costing $25,000, will be erected at Davis, Yolo County. The building will be one-story, of reinforced concrete with tile roof.

WATSONVILLE GYMNASIUM

Bids have been taken for the construction of a reinforced concrete gymnasium for the Watsonville Junior High School, from plans by Architect Harold H. Weeks, Balboa Building, San Francisco. For this P.W.A. project, the sum of $125,000 is available.

OAKLAND APARTMENT BUILDING

Plans are being prepared by Architect Frederick Soderberg, 341-17th Street, Oakland, for a group of six apartment buildings, to cost $15,000 each. The owner is M. B. Skaggs. Construction work is being handled by Phillip S. Reese, 341-17th Street, Oakland.

OAKLAND CHURCH

A $30,000 frame and stucco church is to be built at Hudson and Manila Streets, Oakland, for the Rockridge United Brethren Congregation. Harold H. Weeks, 593 Market Street, San Francisco, is the architect.

POINT ARENA HIGH SCHOOL

An auditorium, eight classrooms and a science unit, is to be built at Point Arena for the Point Arena Union High School District. Plans for the $50,000 unit have been completed by C. A. Caulkins of Santa Rosa.

FORT BRAGG SCHOOL

The Fort Bragg Union High School District has received approval of a $160,000 allotment by P.W.A. for new high school buildings to include classrooms, auditorium and gymnasium. W. E. Coffman, Forum Building, Sacramento, has completed the plans and bids will be received up to November 19th.

FACTORY ADDITION

From plans by Architects Farr & Ward and W. H. Ellison, structural engineer, a $60,000 one-story steel and concrete addition, with some glass and brick, is being built to the bone storage shed building of the Consolidated Chemical Company on Bayshore Boulevard, San Mateo County.

STOCKTON GRAMMAR SCHOOL

A one-story frame and brick veneer six-classroom building has been designed by Architect Joseph Losekann for the Stockton Board of Education. The new building will be erected on South Sutter Street, Stockton.

WAREHOUSE REMODELING

The Lyon Van & Storage Company will spend $10,000 remodeling its warehouse at 1520 Stockton Street, San Francisco. Albert F. Roller is the architect and the Dinwiddie Construction Company the builders.

FACTORY ADDITION

The Palm Olive-Peet Company will build a one-story reinforced concrete, frame and corrugated iron addition to its Sixth and Carleton Street factory in Berkeley.

HILLSBOROUGH RESIDENCE

Plans have been revised by Architects Miller & Warnecke of Oakland, for a $15,000 seven-room residence for an unnamed client in Hillsborough.

STORE ALTERATIONS

Sommer & Kaufmann will spend $25,000 in remodeling their store at 838 Market Street, San Francisco, from plans by Architect Albert R. Williams, 251 Post Street, San Francisco.

SOUTHERN CALIFORNIA CHAPTER

At the October 12th meeting of Southern California Chapter, A. I. A., owners of a number of historic California buildings were presented certificates of appreciation. The presentations were made by Henry F. Whithey, who had charge of the recent survey of these monuments. The certificates were issued by the U. S. Department of the Interior in appreciation of the cooperation by property owners to architects, National Park service and WPA research workers. Drawings, maps and charts of old structures have been assembled for historical archives of early American architecture.

Among those who were present to receive certificates were Dr. Malcolm McKenzie, owner of the Francisco Reyes, an adobe house near Calabasas; Mr. and Mrs. N. R. Harrington, owners of the Andres Pico house near San Fernando Mission, and Father Joseph Thompson, representing Archbishop John J. Cantwell. Certificates given to Father Joseph were for the San Juan Capistrano, San Gabriel, San Fernando, Ventura, Santa Barbara and Santa Ynez missions.

Roland E. Coate, who was recently awarded a fellowship by the Institute, was presented his fellowship certificate by David C. Allison. A number of photographs of Mr. Coate's work were exhibited, including those pictured in the October issue of The Architect and Engineer.

LARGE HOUSING PROJECT

The National Housing Bureau, R. J. Richards, 1209 MacDonald Avenue, Richmond, has started construction of the first unit of 200 four-, five- and six-room dwellings in the Pullman Tract, Richmond. The houses will vary in cost from $3,000 to $5,000 each. The plans are in the hands of Architect Edwin L. Snyder, 2104 Addison Street, Berkeley. Mr. Snyder has recently completed drawings for a tavern in Emeryville for Mr. Cushing, also preliminary plans for a $40,000 physicians' office building in Berkeley.

LEAD CO. ENTERTAINS ARCHITECTS

Architects and engineers of the Los Angeles area were guests of the National Lead Company and the Producers' Council Club of Southern California, at an informal meeting at the Elks' Club in Los Angeles, October 28. The subject was "Paint Defects" and the "Use of Paint for Better Light and Better Sight." A similar meeting was held in San Diego October 21.

ENGINEERS FORM PARTNERSHIP

Frederick F. Hall and Michael V. Pregnoff have formed a partnership for the practice of structural engineering with offices at 350 California Street, San Francisco. Mr. Hall was formerly associated with the late C. H. Snyder, whose uncompleted commissions he is carrying out.

PERSONAL

William L. Painter, junior member of Graham and Painter, architects and engineers with offices in Seattle and Shanghai, recently left Shanghai bound for New York and the United States by way of the Trans-Siberian Railway to Moscow, thence across Europe and the Atlantic Ocean to America.

Harold Adams, head draftsman in the office of Architect Henry Bittman, Securities Building, Seattle, where he has been employed for the past 15 years, was recently named associate architect by Mr. Bittman. Mr. Adams graduated from the University of Illinois.

Francis Mayer, architectural draftsman who has received four years of technical training in the office of Heath, Gove and Bell, Puget Sound Bank Building, Tacoma, has entered the employ of Smith, Carroll and Johanson.

Ralph C. Beardsworth, Oregon architect, has opened an office for general practice at 326 Miner Building, Eugene.

Stanley T. Shaw, architect of Tacoma, has moved his office and House Plans Library from Room 710 to Room 1011, Washington Building.

Achitect William Allen announces the removal of his offices from 3876 W. Sixth Street to 5655 Wilshire Boulevard, Los Angeles.

Charles F. Mawry, architect, announces the removal of his office for the practice of architecture from the Monadnock Building to 9 Geary Street, San Francisco.

Franz Herding, architect and city planner of Los Angeles, has returned from a two months trip abroad which included a visit to the Paris Exposition where he made a number of interesting sketches and notes. He has promised to assemble some of the material for publication in an early issue of The Architect and Engineer.

Frederic M. Ashley, for the past 14 years a member of the firm of John C. Austin and Frederic M. Ashley, architects of Los Angeles, has severed partnership with the firm, due to ill health. The business will continue under the direction of Mr. Austin.

Architect Harry Hayden Whiteley announces that he has dissolved the partnership that has existed between himself and Harry E. Werner. Mr. Whiteley's office is located at 9060 Airdrome Street, Los Angeles.

C. H. Purcell, state highway engineer of California, was elected president of the American Association of State Highway Officials, at the annual convention of the Association in Boston.

W. H. CORLETT

W. H. Corlett, a pioneer architect of California, died at his home in Napa, October 7, aged 81, Mr. Corlett designed many of the outstanding buildings nearly half a century ago in Napa county and other localities. He was architect of the A. B. Spreckels home. Mr. Corlett was one of the first subscribers of The Architect and Engineer, founded in 1905. He is survived by three children, Will G. Corlett, architect of Oakland, Harry Corlett, also of Oakland, and Mrs. Lloyd Crandall.

MARIN HOMES WELL HEATED

Marin Oil & Burner Company of San Anselmo contributed to the comfort of the Carl Gromme houses, illustrated in this issue, by heating and air condition installations. Architect Gromme's own home is equipped with an oil burning combination domestic hot water and forced warm air plant, while the residences of Dr. Polland, Rafael Porta and Mrs. L. F. Hill all have forced warm air and winter air conditioning systems handled by the Marin Oil & Burner Company.

WASHINGTON STATE SCHOOLS

Six public school building projects in Washington amounting to $447,000 in estimated cost, have been approved by the Federal Public Works Administration pursuant to examination of plans prepared in the office of Architect Earl W. Morrison, Textile Tower, Seattle. These include three units in Wenatchee, and schools at Alderwood Manor, Silver Lake and Granite Falls in Snohomish County.

GRANTED CERTIFICATES TO PRACTICE

At a recent meeting of the California State Board of Architectural Examiners, Provisional Certificates to practice architecture were granted to the following: Ernest Born, 802 Montgomery Street, San Francisco; Edward D. Cerruti, Jr., 462 Stow Avenue, Oakland; William H. Young, 500 Hyde Street, San Francisco.

STEEL "H" PILING

The Structural Engineers' Association of Northern California held its November meeting at the Engineers' Club on Tuesday evening, November 2.

Milo S. Farwell, Consulting Engineer for the Bethlehem Steel Company, gave an address on the subject of Steel "H" Piling. Motion pictures and general discussion followed the talk.

RESIDENCE NEAR LAFAYETTE

W. W. Wurster, Newhall Building, San Francisco, has awarded contract for the construction of a seven-room house of underdown concrete blocks in Happy Valley, near Lafayette, for Dr. O. H. Garrison.

BOOKS - COMMENTS - REVIEWS

SPANISH COLONIAL ARCHITECTURE IN THE UNITED STATES", by Rexford Newcomb. Published by J. J. Augustin, 30 Irving Place, New York City. Price $12.00.

This volume by Professor Rexford Newcomb, A. I. A., Professor of the History of Architecture and Dean of the College of Fine and Applied Arts, University of Illinois, forms the culmination of a long series of studies in Hispanic-American architecture extending over a quarter of a century.

In this study, Dean Newcomb traces the vari-colored Spanish architecture from its homeland, through Mexico, and into the various American states, where, introduced by Spanish priests, soldiers and colonists, it took root and where, in response to new demands, as time went on, it modelled itself into forms that the world had never before witnessed. How it deversified itself in its various provincial expressions in Florida, along the Gulf Coast, in Texas, in New Mexico, in Arizona and in California is plainly traced and a complete analysis of each regional expression is set forth. The volume is illustrated by 130 plates of carefully made measured drawings and photographs. This is the first work in any language to treat the Hispanic-American architecture of the United States in its entirety.

"IT'S FUN TO BUILD THINGS" by W. T. R. Price Hillman-Curl, Inc., New York City, N.Y. Price: $1.50

A very pleasant little book well put together and of such an entertaining nature that we find ourselves agreeing with the publishers that when it has been read there will be a decided run on local hardware dealers for materials with which to build book shelves, window boxes, chests and many other simple things that can be done at home, and if neatly done are a credit to both home and builder.

The book should prove an excellent guide to the layman for it is not too technical. Illustrations are profuse and the diagrams clear and concise.

"THE STEEL SQUARE POCKET BOOK" by Dwight L. Stoddard; Scientific Book Corp., New York City, N. Y. Price, $1.00

A very handy little reference book illustrating and describing the practical methods of using the carpenter's steel square. There is quite a problem at hand for the novice in the proper use of a steel square and no better way of thoroughly understanding this tool can be found than by referring to this book as small enough to fit one's vest pocket. There are illustrations of practical value.

CLUBHOUSE IMPROVEMENTS

Plans have been completed by Architects Miller & Pflueger for alterations and additions to the Family Club at 545 Market Street, San Francisco. Construction will be brick and frame, the work to include an additional floor for use as a sun deck.

HONOR AWARDS—1937

Reviving its custom of holding an annual Honor Award Program to encourage the development of better architecture in Southern California and to give recognition to outstanding works of architectural design in this region, which was discontinued during the depression because of the lack of building, the Southern California Chapter, The American Institute of Architects, this year conducted a program devoted to residential architecture in the South.

One hundred and ten works of residential architecture and allied arts were submitted, from which thirty-nine were chosen to receive Honor Awards and an additional number of twenty-five were cited by the jury for public exhibition. The jury of awards, comprised of Messrs. Clarence A. Tantau of San Francisco, John Frederic Murphy of Santa Barbara, and Herbert J. Powell of Los Angeles, inspected photographs submitted and visited the works before rendering their judgement.

Preparations are being made for a display of photographs of work selected by the jury, early in January.

Honor Awards were granted on the following works:

Owner	Architect or Designer
Bench for Dr. Francis Griffin Residence	
Coffee Table for Lynn Atkinson Residence	Frank Baden
Mr. & Mrs. Maurice Saota, Los Angeles	W. L. Risley
Mr. James H. Clapp, Pasadena	W. L. Risley
Mr. H. S. Parsons, San Marino	Palmer Sabin
Mrs. W. H. Merriam, Hollywood	Russel Ray
Mr. Harwell Harris, Los Angeles	Harwell Harris
Mme. Amelita Galli-Curci, Westwood	Wallace Neff
Mr. & Mrs. Arthur Smiley, Bel Air (Landscaping)	Bashford & Barlow
Mr. & Mrs. Guy M. Searcy, Michellinda (Landscaping)	Bashford & Barlow
Mr. & Mrs. George J. Dunbaugh Pasadena	Van Pelt & Lind
Mr. & Mrs. Prentiss Fulmor, Altadena	Van Pelt & Lind
Mr. H. P. Ullman, Beverly Hills	R. C. Flewelling
Dr. & Mrs. Clayton R. Johnson, Whittier	A. R. Hutchason
Mr. & Mrs. Ralph E. Phillips, San Marino	H. Roy Kelley
Mr. Charles B. Barkelew, San Gabriel	H. Roy Kelley
Gail & Marie Houston, Los Angeles	H. Roy Kelley
Mr. & Mrs. Guy H. Searcy, Michellinda	H. Roy Kelley
Mrs. James Irvine, Altadena	H. Roy Kelley
Mr. & Mrs. John D. Holman, San Marino	H. Roy Kelley
Mr. & Mrs. Paul Pulliam, Pasadena	H. Roy Kelley
Anne Gilbert, Godfrey Davies, Ian Campbell, Pasadena	Webster & Wilson
Mr. & Mrs. Arthur Smiley, Bel Air	Roland E. Coate
Mr. & Mrs. M. G. Eshman, Bel Air	Roland E. Coate
Mr. & Mrs. David O. Selznick, Beverly Hills	Roland E. Coate
Mr. & Mrs. Thomas F. Rodgers, North Hollywood	A. L. Herberger
Mr. Richard Campbell, San Marino	Witmer & Watson
Haines-Foster, Inc., Hollywood (Landscaping)	Yoch & Council
Mr. George Cukor, Los Angeles, (Landscaping)	Yoch & Council
Mme. Amelita Galli-Curci, Westwood (Landscaping)	Yoch & Council
Mr. & Mrs. Eugene P. Clark, Los Angeles	Sumner Spaulding
Mr. Harold S. Anderson, Bel Air	Sumner Spaulding
Mr. & Mrs. Sumner Spaulding	Sumner Spaulding
Mrs. N. C. Davidson, Palm Springs (Int. Decoration)	Honor Easton
Mr. David Walter, Arcadia	Marston & Maybury
Mrs. Nelson Perrin (Deceased), Pasadena	William S. McCay
Mr. & Mrs. Gaylord Martin, San Marino	William S. McCay
Mr. William S. McCay, Pasadena	William S. McCay
Miss Jeanette M. Drake, Pasadena	Edgar Bissantz
Textiles	Dorothy Liebes

In addition to the above Honor Awards, the jury cited the following meritorious works for exhibition:

Owner	Architect or Designer
Mr. & Mrs. Bruce F. Bundy, Arcadia	H. C. Nickerson
Mr. & Mrs. Robert M. Yost, Los Angeles	Kemper Nomland
Dr. J. J. Ginsberg, Los Angeles	W. L. Risley
Mr. & Mrs. Graham A. Laing Pasadena	Harwell Harris
Mr. & Mrs. Clark Millikan, Pasadena	Wallace Neff
Miss Lucy Anne McCarthy, Pasadena	D. D. McMurray
Mr. & Mrs. Robert Pringle, Bel Air (Landscaping)	Bashford & Barlow
Mr. & Mrs. F. W. Braun, Bel Air (Landscaping)	Bashford & Barlow
Mr. & Mrs. Hoyno Wells, Sierra Madre	Graham Latta
Mr. and Mrs. J. H. Howard, Whittier	A. R. Hutchason
Mr. & Mrs. L. H. Jenkins, San Marino	A. R. Hutchason
Maj. Harry L. Toplitt, Brentwood Heights	H. Roy Kelley
Mr. & Mrs. T. W. Braun, Bel Air	H. Roy Kelley
Mr. Robert J. Pringle, Bel Air	H. Roy Kelley
Mr. & Mrs. Gary Cooper, Brenwood	Roland E. Coate
Mr. & Mrs. Charles E. Davis Pasadena	Roland E. Coate
Mr. William M. Sutherland, Laguna Beach	Witmer & Watson
Mr. & Mrs. M. G. Eshman, Bel Air (Landscaping)	Yoch & Council
Mr. & Mrs. David O. Selznick Beverly Hills (Landscaping)	Yoch & Council
Mr. & Mrs. Bruce F. Bundy, Arcadia (Landscaping)	Yoch & Council
Mr. & Mrs. Herbert N. Millea, Santa Monica Canyon	Sumner Spaulding
Mr. & Mrs. Sam Behrendt, Beverly Hills	Sumner Spaulding
Dr. & Mrs. Francis Griffin, Holmsby Hills	Sumner Spaulding
Mr. & Mrs. Frank C. Beetson, Flintridge	Marston & Maybury
Mr. & Mrs. Oscar Moss, Los Angeles	Edgar Bissantz

RESERVOIR BUILT IN ROCK

The 3,000,000 gallon reservoir for the 1939 Golden Gate International Exposition, cut into the solid rock of Yerba Buena Island, is receiving its finishing coat of gunite. Aopproximately 25,000 cubic yards of rock were excavated by the U. S. Army Engineers on this job. The reservoir will be fed by a ten-inch steel pipe line which is being laid on the San Francisco-Oakland Bay Bridge by Herman Lawson at a cost of $113,000. It is expected that water connections will be made before the first of the year.

WORLD'S LARGEST WOOD STRUCTURES

Six exhibit structures being erected for the 1939 Golden Gate International Exposition on San Francisco Bay rank among the largest wooden structures ever built. They are all of three-hinged arch design and measure 178 by 753 feet, 200 by 886 feet, and 415 by 200 feet in pairs. Arches of 200-foot span used 78-foot, 12 by 16 inch timbers and weigh 39,800 pounds each.

ARCHITECTS' BULLETIN

Issued For

THE STATE ASSOCIATION OF CALIFORNIA ARCHITECTS

Northern Section

STATE ASSOCIATION MEMBER
OF THE
AMERICAN INSTITUTE OF ARCHITECTS

Editor

Harris C. Allen

Address all communications for publication in the Bulletin to the Editor (Harris C. Allen) 557 Market Street, Room 218, San Francisco, California.

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The Convention At Santa Barbara

THERE has not been time to prepare and submit a complete report of the annual Convention at Santa Barbara, but returning delegates have (enthusiastically) brought enough information to provide highlights. The next Bulletin will carry accurate details as may be necessary. Thank-you resolutions, and the like, will be sent directly to recipients and need not be spread upon these pages.

Without exaggeration, this was the largest and one of the most successful conventions in our history. Approximately 200 delegates registered and either they all stayed through the weekend or other recruits arrived, for about the same number attended the Golf dinner Saturday night, which wound up the festivities in a feast of fellowship and fun.

Mayor Maher (no foolin') opened the first session with a hearty welcome to the delegates, and business started without delay. President Hibbard gave a general report on the year's activities, and the finances of both Sections were announced to be in better shape than for several years (audits may be inspected at the Association offices). Vice-President Harry Devine sent in an interesting report as Chairman of the Legislative Committee, which was accepted and it was voted to continue this committee for two years, with a sub-committee of two to coordinate with the State Board of Architectural Examiners for determination of legal changes needed for strengthening the Board's authority. In this report it was noted that out of 8000 bills introduced at the last session, all supposed to affect the building industry were studied and a course of action decided. The action of the Legislature and the Governor were practically identical with our committee's recommendations. However, after the session closed an Act relating to the Department of Finance was discovered to contain a very unfortunate paragraph which is interpreted to mean that no private architect or engineer may be employed on any State structure.

The Convention resolved to work for the repeal of this Act (Senate Bill 744) and meanwhile to urge the appointment of consulting architects and engineers by the State Division of Architecture.

It was also resolved to support vigorously the efforts being made by architects in Marin County to overcome discrimination against architects and engineers in the matter of supervision.

It was the consensus of opinion that Legislative activities should be carried on with the Combined efforts of all branches of the industry, wherever possible.

RESOLUTIONS

A resolution was passed urging that a Building Industry Conference Board be formed in Southern California similar to that now existing in the North, which has proved so valuable; to consist of official representatives of the several organizations of architects, engineers, general contractors and producers. Incidentally, this Northern Board advises us that the State Chamber of Commerce

Garden, wishing well and a group of cottages at El Encanto, Santa Barbara, where California State Architects convened.

will be requested by its Construction Committee to declare a basic policy in favor of legislation to permit the employment of private architects and engineers on public buildings.

Action was taken emphasizing the importance of good business practice and a standard of fair fees

The amendment to our constitution was passed concerning affiliations with the Association of draftsmen belonging to a state-wide society.

A resolution was passed calling for opposition against the establishment of any new report service in this State.

William G. Merchant and Louis N. Crawford were confirmed as our representatives on the Institute Committee on State Organizations.

The Convention favored San Francisco as location for the 1938 Convention. Active convention committees will be appointed by the Northern Executive Board.

NEW OFFICERS

New State officers are as follows:

President, Harry M. Michelsen, San Francisco.
Vice-President, George D. Riddle, Long Beach.
Secretary, Louis N. Crawford, Santa Maria.
Treasurer, Otto G. Hintermann, San Francisco.

The Convention dinner on Friday night had musical entertainment with a minimum of the spoken word. On Saturday, the innovation of a buffet lunch enabled ardent golfers to start expeditiously and all rounds to be finished before dark (not that all participants welcomed this definite accounting of their scores). Eric Barnett conducted the festivities of the evening, which included community singing led by Winsor Soule, and a Hollywoodish program of vaudeville with music, a dancer (hula), a sleight-of-hand magician, a rope expert—no hanging involved, not even in effigy, although it is rumored that boosters for Del Monte were after someone's blood. Practically everybody received a "souvenir of good will", including many of the ladies, and it is a pleasure to record that the handsome trophy donated by the Producers Council Club of Northern California, was won by our handsome, modest and popular member, Charles Sawyer.

COMMITTEES FOR 1937-8

Governmental Relations and Legislation: Harry J. Devine (Chairman), Albert J. Evers (Vice-Chairman), John J. Donovan, Gwynn Officer, Albert F. Roller.

Professional Relations:

Gwynn Officer (Chairman), Earl MacDonald (Vice-Chairman), Conrad T. Kett, Vincent Raney, Charles E. J. Rogers, Henry C. Smith, Dole F. Thomson.

Industrial Relations:

Frederick H. Reimers (Chairman), Wilbur D. Peugh (Vice-Chairman), Thomas J. Kent, Dodge A. Riedy, Ralph E. Wastell.

Financial Relations:

William G. Merchant (Chairman), Charles F. Masten (Vice-Chairman), Birge Clark, Henry H. Gutterson, Houghton Sawyer.

Technical Relations:

Frederick H. Meyer (Chairman), William G. Corlett (Vice-Chairman), G. Fred Ashley, Walter T. Steilberg, Albert R. Williams.

Public Relations:

Harris C. Allen (Chairman), Wayne S. Hertzka (Vice-Chairman), Harvey P. Clark, Henry C. Collins, Carl I. Warnecke.

ARCHITECTS AT THE STATE CONVENTION

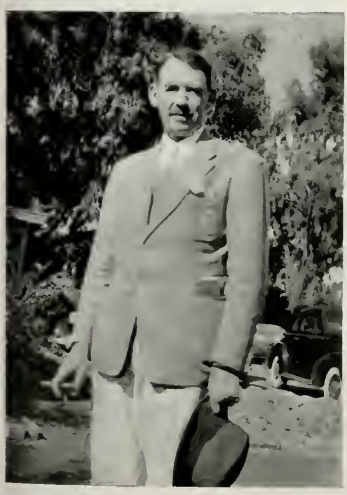
Snapshots and Comments by Fred Jones

The ladies contributed very materially to the success of the Convention. When business was over and the delegates sought recreation and entertainment, presence of the fair sex made the situation ideal. From left to right—Mrs. Fred Jones, Mrs. John J. Donovan and Mrs. Charles Sawyer.

Salute President Michelsen! . . . first a good architect; second, a fine chap to know, and third, one who never seems to tire of working for the betterment of his profession. Harry M. Michelsen, the new guiding spirit of the State Association of California Architects, has a hat full of ideas which he may be depended upon to empty into the lap of the Association with fruitful results. If Harry's plans mature, and there is no good reason to believe they will not, the Association is all set for a record year.

The man on the left, engrossed in conversation, is Frederick H. Meyer, member of the California State Board of Examiners since Friend W. Richardson was Governor. Mr. Meyer's indefatigable work on the Board has earned his retention by succeeding Governors, regardless of political affiliations. Otto G. Hintermann is listening intently to what Mr. Meyer has to say about the good of the profession. Otto is a valued member of the Board of Control of the State Association and Treasurer of the Northern District.

The fellow who had a great deal to do with the success of the convention, the man who selected the meeting place, who planned the palatable barbecue, banquet and golf tournament, Winsor Soule, brilliant architect of Santa Barbara. They say he can design anything from a luxurious trailer (he has one) to a monumental public building. With a capable committee at his heels, including the matronly Mrs. Soule, who took care of the ladies, the Association was fortunate in having such splendid workers to help put over the largest attended meeting yet held by the Association in the South.



These two good looking gentlemen are not fighting. Their clenched fists dramatically express their feelings toward recent legislation in Sacramento that bars private architects (all tax payers) from participating in the preparation of plans for $20,000,000 worth of State building. The chap on the right is Louis J. Gill (he says don't spell my name L-e-w-i-s), a member of the California State Board of Architectural Examiners, and one of the three members of the San Diego Civic Center Commission. The other fellow in the snap-shot is William P. Lodge, affable, and possessing a real sense of humor; past president of the San Diego and Imperial County District Society, State Association of California Architects.

When John J. Donovan was asked to pose for this snap-shot he had just been "touched" for some loose change by his lovely daughter, Dorothy. It seems there was some sort of an anniversary close at hand and the little lady wished to do some shopping. John's expression would never reveal he had been bribed. As former President of the State Association and one of its organizers, no architect in the North has done more to further the success of the organization than J. J.

Architects Reports' Board of Control:
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District Societies:
Walter E. Baumberger (Chairman), Norman W. Sexton (Vice-Chairman), Howard G. Bissell, Herbert E. Goodpastor, Ralph Wyckoff.

Entertainment:
John K. Ballantine, Jr. (Chairman), Roland I. Stringham (Vice-Chairman), Abe Appleton, Ellsworth E. Johnson, Wesley A. Talley.

Convention Advisory Committee:
John K. Ballantine, Jr., (Chairman), William I. Garren (Vice-Chairman), Roland I. Stringham, Otto G. Hintermann, Harris C. Allen.

Draftsmen's Organizations:
Otto G. Hintermann (Chairman), Albert J. Evers (Vice-Chairman), John F. Beuttler, Edward F. Flanders, Raymond W. Jeans.

Treasurer's Committee:
Otto G. Hintermann (Chairman), Lawrence H. Keyser, Thomas E. Pring.

PRODUCERS' COUNCIL

In accordance with the request of many architects, a list of members of this group, all in San Francisco, is published herewith:

American Brass Co. ..... C. R. Epley
American Radiator Co. ..... Ross M. Clark
Armstrong Cork Co. ..... F. K. Pinney
Bigelow-Sanford Carpet Co. ..... G. E. Roberton
Ch. Metal Weatherstrip Co. ..... R. B. Powers
Columbia Steel Co. ..... W. P. Wooldridge
Crane Co. ..... Austin W. Sperry
W. P. Fuller Co. ..... A. P. Otto
General Electric Co. ..... R. W. Beard
Higgins Lumber Co. ..... J. E. Higgins, Jr.
Hoffman Specialty Co. ..... P. M. Hunt
Indiana Limestone Co. of Calif. ..... W. W. Gainey
Johns-Manville Sales Corp. ..... N. L. Best, E. H. Clausen, Dwight W. Jones
Kawneer Mfg. Co. ..... P. H. Welch
Kohler Co. ..... H. A. Davis
Libbey-Owens-Ford Glass Co. ..... J. G. Mackenzie
Masonite Corp. ..... Horace Hills

The man who, to a more or less extent, weaves the destinies of San Francisco's municipal architecture—particularly its school buildings—Charles H. Sawyer, was just as backward about posing for this picture, as he is modest and unassuming in his official duties at the City Hall. It is no easy job, the one which entitles Mr. Sawyer to the rank of City Architect, but one never hears him complain. This pose of Mr. Sawyer is characteristic—it wouldn't be Charlie without the pipe, and it wouldn't be a convention without Mr. Sawyer and the Mrs.

Master Builders Association	Thomas Ralph
National Lead Co.	A. W. Scott
Otis Elevator Co.	G. R. Kingsland
The Okonite Corp.	Wm. G. Stearns
Pacific Foundry Co.	H. M. Howard
Pecora Paint Co.	Fred. W. Kolb
Parsons-Dwan Co.	V. S. Persons
Pittsburg Plate Glass	Paul De Witt
H. H. Robertson Co.	L. Y. White
Rolscreen Co.	H. E. Root
Sisalkraft Co.	P. M. Olsen
The Spencer Turbine Co.	Lester F. Scott
Standard Sanitary Mfg. Co.	B. F. Blair
Stanley Works	S. V. Armstrong
Trumbull Elec. Mfg. Co.	S. L. Siebert
Universal Atlas Cement Co.	V. G. Paulsen
Van Fleet-Freear Co.	G. H. Freear
Vermont Marble Co.	L. D. Saylor, T. M. Howard
Western Asbestos Co.	Clarke E. Wayland
Westinghouse Elec. & Mfg. Co.	R. M. Campbell
Westinghouse Elec. Elev. Co.	Arthur Skaife

Architect representatives on Executive Committee:

C. F. Masten, 233 Post Street (Masten & Hurd).

Wilbur Peugh, 333 Montgomery Street.

Harry M. Michelson, 205 Montgomery Street.

OCTOBER CHAPTER MEETING

The regular monthly meeting of Northern California Chapter, A. I. A., was held at the Stewart Hotel, San Francisco, at 6:30 P. M., October 26. The meeting was conducted by Will G. Corlett, President.

It being the annual meeting, Mr. Corlett gave a resume of the activities of the Chapter and Board of Directors during his presidency. His remarks and the reports of committees which followed, indicated that the Chapter had passed through a fruitful year.

The Secretary-Treasurer's report showed the Chapter to be in sound financial condition and with a membership roll the same as for the previous year.

Reports were received and accepted from committees and representatives in cooperating organizations as follows:

Public Information, Library of Architectural Club, Education, Membership, Competitions, State Association, Building Industry Conference Board, Building Code, Federation of Arts, California Roadside Council.

The new By-Laws were presented for adoption, it being announced that copy thereof and notice establishing this meeting as the time for such action had been mailed to each member more than twenty days prior thereto, as prescribed.

Following a brief discussion, Mr. Meyers, seconded by Mr. Perry, moved that the By-Laws be adopted subject to the inclusion of existing provision on Educational Fund and subject to typographic corrections. The motion was unanimously carried.

On motion of Mr. Evers, seconded by Mr. Allen, payment of $15.00 for yearly membership in the Building Industry Conference Board was authorized.

On motion of Mr. Meyer, seconded by Mr. Allen, it was voted that the meeting go on record as favoring the transfer of $300.00 from the general fund to the Educational Fund.

On passage of Mr. Allen's motion instructing the Secretary to cast a unanimous ballot the following officers were elected:

President, Warren C. Perry; Vice-President Wm. Wilson Wurster; Secretary-Treasurer, James H. Mitchell; Directors (3 years), John Knox Ballantine, Jr., and Chester H. Miller; Director (1 year), Will G. Corlett.

When accepting the chair, Mr. Perry warmly expressed his appreciation of the honor given him.

Under the head of new business, Mr. Garren moved and it was carried, that the Chapter record itself in letters to the press as favoring the aim of the Laurel Hill Memorial Association to have Laurel Hill Cemetery established as a Memorial Park instead of a real estate subdivision.

Mr. Evers spoke on the plan for a state-wide society of draftsmen and said that the way was now paved for its organization as an affiliate of the State Association. He felt that it would be valuable as a training ground for future Institute members.

Mr. Meyer stated that the California Edition of the Uniform Code had been completed and adopted and was now ready for printing. Preparation of the Code, he said, had been conducted over a number of years under the auspices of the California State Chamber of Commerce. He felt that it was not to be equalled elsewhere in its kind because it had been studied and compiled by highly trained architects and engineers who, he believed, are the professional group best qualified to edit such a document.

The evening was pleasantly ended by short accounts from delegates to the 69th A. I. A. Convention of the impressions left with them from this gathering. The delegates were Messrs. Meyer, Bakewell, Evers and Perry.—J. H. M.

HART WOOD TAKES PARTNER

Hart Wood, former San Francisco architect and since 1919 practicing the profession in Honolulu, has announced a partnership with Arthur J. Russell, advisory architect since 1934 for Castle & Cooke, Ltd.

Mr. Wood has been prominently identified with the architecture of the Islands, having designed several of the better known Honolulu buildings, among which are the S. & G. Gump Building, the Chinese Christian and the Christian Science churches, Makiki Reservoir, and, during a former partnership with C. W. Dickey, the Alexander & Baldwin Building and the Honolulu City Hall.

Mr. Russell, after graduating from Harvard, worked for Peabody & Sterns, and Shepley, Rutan & Coolidge of Boston. He was the architect of the new plantation cottages, the nurses' homes, the clubhouse at Waialua and the store at Kohala. In addition to this work he has designed houses both in Honolulu and on windward Oahu.

Asilomar—where the wind-swept cypress meet the sun-kissed sands and the murmuring waves of the Pacific.

STRUCTURAL ENGINEERS DISCUSS BUILDING CODE AT CONVENTION

UPWARDS of 100 engineers and their wives attended the Sixth Annual convention and get-together at Asilomar, near Pacific Grove, October 15 to 17th. The 100 or more acres of ground, with beach, cypress and pines, numerous buildings for conferences, and recreative features, proved ideal for just such an assemblage.

The Uniform Building Code was the topic of main discussion. C. D. Wailes of Los Angeles, former president of the Pacific Coast Building Officials Conference, took an active part in the discussion. Mr. Wailes brought out the fact that there seemed to be two principal lines of thought in building legislation. One of these leans extremely far to the idealistic, desiring a code made up entirely of fundamental requirements and statements so that it would allow the designer extreme latitude in his problem and would also allow the enforcing agency a wide latitude in his rulings and interpretations. This type of code, Mr. Wailes stated, would involve a great deal of uncertainty for both parties. The ideas and opinions of the designer might not in any way correspond with those of the enforcing agency and such differences of opinion could rarely ever be satisfactorily settled. Furthermore, in matters of enforcement of a law where this type of code would be used, the only evidence which would be of value before a court would be that presented by expert witnesses and thus each attempt at legal enforcement would result in lengthy and expensive court procedure.

The opposite to this type of code is a code going very explicitly into all details of construction, even to the standpoint of being a complete specification written around the use of materials, devices, systems, etc. This type of code becomes extremely voluminous, and where there is so much detail it is almost impossible to fully comply with the law for where a written law contains minute specifications, unless they are followed to the letter of the law, a violation exists. This type of code generally proves to be very expensive and penalizes capital invested in buildings.

Mr. Wailes pointed out that the Uniform Building Code of the Pacific Coast Building Officials Conference follows a middle path, being a statement of fundamental principles, supplemented by sufficient details so that a clear interpretation of the code is possible and those designing under the code will be guided along the lines of the intent of the code. This particular code follows quite generally the recommendations of the Department of Commerce and is now in use by 188 cities located in 20 different states and the Territory of Hawaii. One hundred thirty-one cities and five counties in California are operating under this code.

Mr. Wailes stated that the Uniform Building Code is the outgrowth of the combined efforts of the building officials, architects, engineers and national organizations interested in building legislation, construction, materials, etc. The code has been developed over a period of years by carefully analyzing in open sessions all materials so that it now reflects the combined judgment of practically all interested parties, Mr. Wailes said.

David H. Merrill, secretary-treasurer of the Pacific Coast Building Officials Conference gave a thorough discussion of the research department of the conference. Mr. Merrill stated that 79 subjects had been presented to the research department for consideration—53 of these had been acted upon and 16 test programs and specifications had been completed. This work has included—shearing and lateral strength of

walls and partitions; insulating materials, strength, fire resistance, etc.; composite walls—walls of natural stone and concrete; gas vents; light weight aggregate; special cements; patented precast wall construction; concrete admixtures; glass block masonry; adobe construction and manufacture; wood treating agents.

Publicizing Structural Engineering," was the subject of an interesting paper by James I. Ballard, editor of Western Construction News". The speaker thought the word publicity" greatly over-worked, abused, misunderstood. The dictionary gives notoriety" as on of the definitions of the word. Engineers do not want publicity that comes under that definition. What they seek is "public recognition" or "public appreciation". Summing up his thoughts, Mr. Ballard said:

"In so far as possible, restrict the use of the word 'publicity', thinking more in terms of public recognition and news about structural engineering which is of interest to the public.

"Group consciousness, as to the value of public recognition, cannot be made effective until individual members have been educated to appreciate the value and need for legitimate self-recognition within the profession.

"A systematic study should be made to determine those elements of your work and activity which have sufficient general interest to justify efforts at impressing those outside the profession.

"Lastly, efforts to secure recognition and appreciation should be definitely confined to those special groups and interests most directly concerned with your work. Such a concentrated campaign could ultimately be widened to the general public."

N. A. Bowers, Pacific Coast editor of "Engineering News-Record", offered the following comments with reference to recent engineering accomplishments and the publicizing of proper credit for same:

"From the opinions expressed at this meeting, I believe that all of us agree as to the opportunities and obligations which confront the structural engineer. The problem is how each individual shall perform his share. You cannot simply appoint committees and then leave entirely to them the performance of all the work that should be done. The individual cannot discharge his obligations and responsibilities in that vicarious way; each must contribute his part in order that the profession shall advance.

"In my opinion, structural engineers in California have made a great contribution to the profession in recent years through their solution of the practical problems in designing to resist earthquakes. Enormous strides have been made, details have been developed, tried out and improved until here in California we have a highly advanced structural design for resisting lateral forces.

In sharp contrast with this brilliant performance the structural engineers have not adequately publicized these advances. Unless this is done, structural engineers elsewhere will not have the advantage of knowing what progress has been made here nor will they know the short cuts to desirable seismic protection at reasonable cost. Moreover, California engineers will lose the credit that rightfully belongs to them and this credit will go elsewhere. The immediate and thoughtful attention of structural engineers of California should be given to this angle of the present situation."

President A. V. Saph, Jr., of San Francisco, presented a report of the activities of the organization during the past year and various committee reports were received.

President Saph also presented a paper introducing the theme "Relations between the Engineer and the Public." Responding to this very interesting subject was Alfred J. Cleary, chief administrative officer for the city of San Francisco. Mr. Cleary discussed thoroughly the civic responsibilities of the structural engineer. An illustrated lecture on the Golden Gate Exposition was given by C. M. Van Derburg, director of publicity for the Exposition.

Golf and tennis tournaments on Saturday afternoon were followed by the annual banquet at which Ford J. Twaits of Los Angeles was toastmaster.

A romantic spot—one of a dozen to be found on the 90-acre play ground at Asilomar.

This group picture was taken October 16 on the grounds of the Asilomar Hotel, near Pacific Grove. It shows members of the Structural Engineers Association of California and guests attending the Sixth Annual Convention. Guests are indicated by (G) following the name.

Top Row (left to right)
Murray Erick
H. W. Bolin
J. T. Stafford
H. L. Kegler
E. F. Levy
L. W. Graham
Geo. McKee
S. S. Gorman
H. J. Degenkolb
J. K. Rode
W. H. Popert
J. E. Shield
H. P. King
Ben Benioff
V. R. Sandner
Howard A. Schirmer
S. C. King
D. C. Willett

Second Row
M. C. Poulsen
H. M. Engle
D. F. Shugart
J. J. Gould
Geo. Washington
R. T. Taylor
A. L. Enger
P. A. Horn
W. E. Emmett
A. P. Fisher
L. H. Nishkian
F. F. Hall
C. D. Wailes, Jr.

Third Row
G. B. Ashcroft
H. J. Brunnier
R. A. Deline
W. H. Ellison
R. D. Dalton
F. P. Ulrich
D. H. Merrill
C. E. Seago
J. E. Byers
R. W. Binder
D. F. Roberts (G)
Mac. D. Perkins
F. J. Twaits
A. C. Horner
P. E. Jeffers
J. B. Leonard

Fourth Row
Milo S. Farwell
T. P. Dresser, Jr.
C. H. Kromer
Hyman Rosenthal
J. A. Paquette
W. Adrian
E. D. Francis
Jesse Rosenwald
A. V. Saph, Jr.
W. J. Long
M. V. Pregnoff
C. A. Whitton
P. I. Baker
Prof. J. B. Wells
R. V. LaBarre

Last Row
J. E. Mackie
S. B. Barnes
C. Mackutchan
H. B. Hammill
G. J. Fosdyke
R. R. Lukens (G)
R. J. Hiller
D. L. Narver
R. J. Kadow
Wm. C. Tait (G)
H. C. Powers
J. W. Twelvetrees (G)

One of the attractive buildings at Asilomar, California, where the Structural Engineers met for their Annual State Convention in October.

CONTRACTOR LOSES CLAIM FOR LIEN BECAUSE SUBCONTRACTOR HAD NO LICENSE

A MECHANICS lien may not be founded on a contract procured contrary to law; furthermore a contract procured by a contractor from an unlicensed subcontractor who was member of a partnership which received a license prior to the time labor was performed, was illegal and void, according to a ruling of the Appellate Court in the Third California District in the case of Holm vs. Bramwell, (Civil 5786). Hence a contractor doing a job on a cost plus basis lost a lien claim against the owner of a building for $1108.63 which he had paid a subcontractor for brickwork and for which the owner refused to reimburse him because the subcontractor did not hold a state license when he secured the job. The case has a number of points of interest to contractors and material dealers. Following is the opinion handed down by Justice Thompson:

The plaintiff, a licensed building contractor, has appealed from a judgment of foreclosure of a mechanic's lien which was rendered in his favor to secure the payment of $2,441.92 and interest. The court disallowed his claim to the extent of $1 108.-63 which amount he voluntarily paid to a subcontractor pursuant to an agreement which was held to be illegal for the reason that the subcontractor was not licensed as required by the Statutes of 1929. The appellant contends this item should have been allowed.

C. H. Bramwell, a resident of Chicago, is the owner of five contiguous lots in Los Angeles. He made a contract with the plaintiff, Holm, to construct buildings on those lots, in compensation for which he agreed to pay plaintiff the cost thereof, plus 10 per cent. Holm was a duly licensed contractor. Holm employed George Collins, who was not a licensed subcontractor, to furnish certain materials and perform certain labor upon the buildings, for which Holm paid him the sum of $1,108.63, no part of which has been refunded. Collins bid for and received from Holm a contract for the brick work Feb. 4, 1934. He was not then licensed. On February 23, 1934, before the labor was performed by Collins, a contractor's license was issued to "Mrs. George Collins & Company", which was found to be a co-partnership of which George Collins was a member. The buildings were completed at a total cost of $8,962.62. The owner paid Holm $6,159.40 of that sum. A balance of $3,699.48 remained unpaid. The owner, contending that the cost of the buildings was excessive refused to pay Holm the Balance on the theory that he had awarded certain contracts for materials and labor to an unlicensed subcontractor, which was contrary to law and invalid. The plaintiff then brought this suit to establish a mechanic's lien on the property and to sell it to satisfy the unpaid balance of $3,699.48. The court adopted findings favorable to the plaintiff in every respect, except that it was found that the claim, to the extent of $1,108.63, was founded on an illegal contract which Holm had made with an unlicensed subcontractor contrary to law, and that it was therefore void. Judgment was accordingly rendered for the plaintiff for the sum of $2,441.-92, for the payment of which a lien was established. It is conceded that the court found and that the plaintiff is entitled to judament for the additional sum represented by 7 per cent interest on $2,441.92 from September 11, 1934, which item for interest was not included in the judgment. The court, however, disallowed the item of $1,108.63, as illegal, finding that the sub contract therefor was contrary to law and void. From that judgment, the plaintiff has appealed.

We are of the opinion the plaintiff's contract with the unlicensed subcontractor is illegal and void and that the court properly disallowed those items in the aggregate sum of $1 108.63 and properly refused to vest a lien upon the property for the payment of that sum.

(1) Mechanics' liens are creatures of statute and therefore dependent upon at least substantial compliance with the law. Numerous authorities support the text which is found in 17 California Jurisprudence, page 81, § 50, as follows:

"Mechanics' liens are entirely of statutory creation, and the statute must be looked to both for the right to the lien and the mode by which it can be enforced. The right to a mechanic's lien depends upon a compliance with the statute, and in order that a valid lien may arise and be enforced, the claimant must strictly, or at least substantially, observe and comply with the provisions of the statute, none of which may be regarded as unessential."

(2) This is not a suit by a materialman or laborer to recover a claim for services performed or materials furnished to the owner of property upon the basis of a quantum meruit. It is a suit to recover money paid pursuant to an illegal contract with a subcontractor which is void. A mechanic's lien may not be founded on an illegal contract procured contrary to law.

That portion of the Contractors' License Law which is applicable to this cause provides as follows:

"§ 1. . . . It shall be unlawful for any person . . . or other organization . . . to engage in the business or act in the capacity of a contractor within this State without having a license therefor as herein provided. . . .

"§ 3. . . . A contractor within the meaning of this act is a person . . . copartnership . . . or other organization . . . who in any capacity other than as the employee . . . undertakes or offers to undertake or purports to have the capacity to undertake or submit a bid, to construct . . . any building . . . or other structure, project, development, or improvement, or to do any part thereof . . . provided, that the term contractor, as used in this act, shall include subcontractor. . . .

"§ 12. . . . Any person who acts in the capacity of a contractor within the meaning of this act without a license as herein provided, and any person who conspired with another person to violate any of the provisions of this act, is guilty of a misdemeanor. . . ." Gen. Laws Supp. 1933, Act 1660.

It will be observed the act requiring a license to be procured applies to a subcontractor as well as to a contractor. Section 3 of the act defines a contractor or a subcontractor as a person, copartnership, or corporation who "undertakes or offers to undertake or purports to have the capacity to undertake or submits a bid, to construct . . . any building." Since the act applies specifically to a subcontractor, it is illegal for one to contract with him or to consider a bid for the construction of any part of a building, unless he is licensed according to law.

(3) The contract between the plaintiff and his subcontractor who was not licensed as required by law, was illegal and void. Stockton Plumbing & Supply Co. v. Wheeler, 68 Cal. App. 592 601, 229 P. 1020; Southlands Co. v. City of San Diego, 211 Cal. 646, 658, 297 P. 521; Firpo v. Murphy, 72 Cal. App. 249, 236 P. 968; City of Los Angeles v. Watterson, 8 Cal. App. (2d) 331, 346, 48 P. (2d) 87; 2 Restatement of the Law of Contracts, p. 1087, § 580.

Assuming, without so deciding, that a contract with a duly-licensed copartnership would be valid, even though it were inadvertently made in the name of an individual member of that copartnership, the subcontract upon which the plaintiff relies was made with Collins before the partnership was licensed. The evidence is uncontradicted that the partnership of "Mrs. Geo. Collins and Company", of which George Collins was a member, was not licensed when the bid was accepted or until after the contract for the brick work was awarded to him. It may, therefore, not be said the plaintiff contracted for that work with a licensed subcontractor.

It is true the Contractors' License Law does not specifically provide that a contract in violation thereof shall be void. But section 12 does specifically provide that:

"Any person who acts in the capacity of a contractor (or subcontractor) within the meaning of this act without a license as herein provided. . . . is guilty of a misdemeanor", and shall be punished by a fine or imprisonment as described therein.

The same section further provides that

"No person engaged in the business or acting in the capacity of a contractor (or subcontractor) as defined by section 3 of this act, shall bring or maintain any action in any court of this State for the collection of compensation for the performance of any act for which a license is required by this act without alleging and proving that such person was a duly licensed contractor at the time the alleged cause of action arose."

(4) It has been repeatedly held that a party to an illegal contract may not rest his cause or recover judgment based upon such void agreement. In Wise v. Radis, 74 Cal. App. 765, at page 775, 242 P. 90, 94, it is said thereof:

"No principle of law is better settled than that a party to an illegal contract or an illegal transaction cannot come into a court of law and ask it to carry out the illegal contract or to enforce rights arising out of the illegal transaction. He cannot set up a case in which he necessarily must disclose the illegal contract or the illegal transaction as the basis of his claim. In Moore v. Moore, 130 Cal. 110, 62 P. 294 80 Am. St. Rep. 78, our Supreme Court quotes Judge Duncan in Swan v. Scott 11 Serg. & R. (Pa) (155) 164, as follows: 'The test whether a demand connected with an illegal transaction is capable of being enforced is whether the plaintiff requires the aid of the illegal transaction to establish his case. If the plaintiff cannot establish his case without showing that he has broken the law the court will not assist him, whatever his claim in justice may be upon the defendant.'"

In the case of Firpo v. Murphy, 72 Cal. App. 249, 236 P. 968, 969, it is said, with respect to the illegality of a contract enacted under a statute which is intended to protect the public against imposition:

"While there is no express declaration in these sections that the transactions condemned are unlawful, or that no recovery shall be had thereon in the event that the provisions are violated, still it has been held that they, being designed for the protection of the public, and a penalty prescribed for a violation thereof, that such penalty is the equivalent of an express prohibition, and that a contract made contrary to the terms thereof is void, and further that whenever the illegality appears, whether the evidence comes from one side or the other, the disclosure is fatal to the case."

(5) There are certain cases in which a recovery may be authorized in spite of an illegal contract, when the action is not founded on the illegal contract, but when on the contrary it is based upon a subsequent legal contract or agreement which may be estabished without reference to the illegal contract.

In the present case, the plaintiff is clearly not entitled to recover a lien to secure the repayment of money which he advanced George Collins pursuant to an illegal contract, for the reason that this suit is based upon that illegal contract and the claim cannot be established except by reference to the price fixed by the illegal contract. The present case, therefore, does not come within the exception to the general rule, above mentioned.

(6, 7) The contract between the plaintiff and the subcontractor, Collins, being illegal and void, the advances alleged to have been paid to Collins are not recoverable in this suit for the reason that they must be deemed to have been voluntarily made. Myers v. City of Calipatria, 140 Cal. App. 295, 299, 35 P. (2d) 377, 379; Metropolitan Casualty Ins. Co. v. Stone, 124 Cal. App. 430, 438, 12 P. (2d) 665. In the Myers Case, supra, it is said in that regard:

"'It is the compulsion or coercion under which the party is supposed to act which gives him a right to relief. If he voluntarily pay an illegal demand in ignorance or misapprehension of the law respecting its validity, he is in no better position, for it would be against the highest policy to permit transactions to be opened upon grounds of this character.'"

We find nothing in the authorities cited by the appellant in conflict with what we have heretofore said. The case of Hunt v. Douglas Lumber Co., 41 Ariz. 276, 17 P. (2d) 815, 820, upon which the appellant chiefly relies, may be readily distinguished from the present case. In the present case the general contractor seeks to recover money he paid to his own subcontractor under his agreement with the subcontractor who was not qualified to make a valid contract because he was unlicensed. It was the duty of the contractor to ascertain whether the subcontractor with whom he proposed to deal was licensed. The contractor was bound to know that the law requires all contractors and subcontractors to be licensed. The contractor was a party to the illegal subcontract under which he seeks to recover. This case does not present circumstances like the Hunt Case, in which a material-man, in good faith, furnished lumber to one whom he was led to believe was the agent of the owner of the building. In the Hunt Case the Douglas Lumber Company brought suit against Hunt, the owner of the building and Estes, his contractor, to recover the reasonable value of lumber which it furnished at the request of the contractor, believing that he ordered the lumber as the agent of Hunt, and not as a mere contractor. That case was not based on the illegal contract. It was not a suit to recover the value of labor or materials furnished pursuant to the contract. It was not a suit by the contractor, nor was it decided on the theory that the lumber was furnished to the contractor. On the contrary, that case was decided on the theory that the lumber was sold to the owner of the building through Estes as his agent. The court says in that regard:

"We have then the following situation: Defendant (the owner) had authorized Estes (the contractor) to proceed with the improvements on his premises and plaintiff (Douglas Lumber Co.) had knowledge of that fact. It had no knowledge that, as a matter of law, the contract apparently existing between defendant and Estes and which, if it did exist, made Estes the agent of defendant for the purpose of fixing a lien was void. Under these circumstances the situation was that frequently existing where the relation of principal and agent as involved. Where A by his conduct leads B to believe C is A's agent the latter is estopped from denying the agency. . . . We think defendant herein is estopped so far as plaintiff is concerned from denying the existence of a valid contract, and therefore a statutory agency, between himself and Estes."

No such situation exists in the present case. No question of agency is here involved. The Hunt Case is not in point.

It is conceded the plaintiff is entitled to judgment according to the findings which were adopted for interest on the sum of $2,441.92 at the rate of 7 per cent per annum from September 11, 1934.

The court is directed to ascertain the amount of interest due according to the findings and allow that sum as a part of the judgment. As so modified, the judgment is affirmed, respondent to recover costs on appeal.

Estimator's Guide

Giving Cost of Building Materials, Wage Scale, Etc.

Amounts given are figuring prices and are made up from average quotations furnished by material houses to San Francisco contractors. 3% Sales Tax on all materials but not labor.

All prices and wages quoted are for San ancisco and the Bay District. There may slight fluctuation of prices in the interior d southern part of the state. Freight rtage, at least, must be added in figuring untry work.

nd—1½% amount of contract.

ickwork—

Common, $40 to $45 per 1000 laid, (according to class of work).

Face, $100 to $110 per 1000 laid, (according to class of work).

Brick Steps, using pressed brick, $1.25 lin. ft.

Brick Veneer on frame buildings, $ .75 sq. ft.

Common f.o.b. cars, $14.00 at yard. Cartage extra.

Face, f.o.b. cars, $45.00 to $50.00 per 1000, carload lots.

HOLLOW TILE FIREPROOFING (f.o.b. job)

3x12x12 in.	$ 84.00 per M
4x12x12 in.	94.50 per M
6x12x12 in.	126.00 per M
8x12x12 in.	225.00 per M

HOLLOW BUILDING TILE (f.o.b. job) carload lots.

8x12x5½	$ 94.50
6x12x5½	73.50

Building Paper—

1 ply per 1000 ft. roll	$3.50
2 ply per 1000 ft. roll	5.00
3 ply per 1000 ft. roll	6.25
Brownskin, 500 ft. roll	4.50
Brownskin, Pro-tect-o-mat, 1000 ft. roll	9.00
Sisalkraft, 500 ft. roll	5.00
Sash cord com. No. 7	$1.20 per 100 ft
Sash cord com. No. 8	1.50 per 100 ft
Sash cord spot No. 7	1.90 per 100 ft
Sash cord spot No. 8	2.25 per 100 ft

Sash weights cast iron, $50.00 ton.
Nails, $3.50 base.
Sash weights, $45 per ton.

Concrete Work (material at San Francisco bunkers)—Quotations below 2000 lbs. to the ton. $2.00 delivered.

No. 3 rock, at bunkers	$1.45 per ton
No. 4 rock, at bunkers	1.45 per ton
Elliott top gravel, at bunkers	2.10 per ton
Washed gravel, at bunkers	1.45 per ton
Elliott top gravel, at bunkers	2.10 per ton
City gravel, at bunkers	1.45 per ton
River sand, at bunkers	1.40 per ton
Delivered bank sand	1.00 cu. yd.

Note—Above prices are subject to discount of 2% per ton on invoices paid on or before the 10th of month, following delivery.

SAND

Del Monte, $1.75 to $3.00 per ton.
Fan Shell Beach (car lots, f.o.b. Lake Majella), $2.75 to $4.00 per ton.

Cement (paper sacks) $3.00 bbl., warehouse or delivery.
Car-load lots delivered $2.70, f.o.b. cars $2.52
(Cloth sacks) $3.00 bbl..
Rebate 10 cents bbl. cash in 15 days.

Atlas White, Calaveras White, Medusa White } 1 to 100 sacks, $1.50 sack, warehouse or delivery; over 100 sacks, $1.25; 2% discount 10th of month.

Forms, Labors average $40.00 per M.
Average cost of concrete in place, exclusive of forms, 35c per cu. ft.; with forms, 60c.
4-inch concrete basement floor ..... 12½c to 14c per sq. ft.
Rat-proofing 7½c
Concrete Steps ..... $1.25 per lin. ft.

Dampproofing and Waterproofing—

Two-coat work, 20c per yard.
Membrane waterproofing—4 layers of saturated felt, $4.50 per square.
Hot coating work, $1.80 per square.
Medusa Waterproofing, 15c per lb., San Francisco Warehouse.
Tricocel waterproofing.

Electric Wiring—$12.00 to $15.00 per outlet for conduit work (including switches).
Knob and tube average $3.50 per outlet.

Elevators—

Prices vary according to capacity, speed and type. Consult elevator companies. Average cost of installing an automatic elevator in four-story building, $2500; direct automatic, about $2700.

Excavation—

Sand, 60 cents; clay or shale $1 per yard.
Teams, $12.00 per day.
Trucks, $22 to $27.50 per day.
Above figures are an average without water. Steam shovel work in large quantities, less; hard material, such as rock, will run considerably more.

Fire Escapes—

Ten-foot galvanized iron balcony, with stairs, $115 installed on new buildings; $140 on old buildings.

Floors—

Composition Floors—18c to 35c per sq. ft. In large quantities, 16c per sq. ft. laid.
Mosaic Floors—80c per sq. ft.
Duraflex Floor—23c to 30c sq. ft
Rubber Tile—50c to 75c per sq. ft.
Terazzo Floors—45c to 60c per sq. ft
Terazzo Steps—$1.60 lin. ft.

Hardwood Flooring (delivered to building)—

13-16x3¼" T & G Maple	$120.00 M ft
1 1-16x2¼" T & G Maple	132.00 M ft
⅞x3½ sq. edge Maple	140.00 M ft

	13-16x2¼" T&G	⅜x2" T&G	5-16x2" Sq.Ed.
Clr. Otd. Oak	$200.00 M	$150.00 M	$180 M
Sel. Otd. Oak	140.00 M	120.00 M	135 M
Clr. Pla. Oak	135.00 M	107.00 M	120 M
Sel. Pla. Oak	120.00 M	88.00 M	107 M
Clear Maple	140.00 M	100.00 M	
Laying & Finishing	13c ft.	11 ft.	10 ft

Wage—Floor layers, $7.50 per day.

Glass (consult with manufacturers)—

Double strength window glass, 20c per square foot.
Quartz Lito, 50c per square foot.
Plate 75c per square foot (unglazed) in place, $1.00.
Art, $1.00 up per square foot.
Wire (for skylights), 40c per sq. foot.
Obscure glass, 30c square foot.
Glass bricks, $2.40 per sq. ft., in place.
Note—If not stipulated add extra for setting.

Heating—

Average, $1.90 per sq. ft. of radiation, according to conditions.
Warm air (gravity) average $40 per register.
Forced air, average $60 per register.

Iron—Cost of ornamental iron, cast iron, etc., depends on designs.

Lumber (prices delivered to bldg. site).

No. 1 common	$38.00 per M
No. 2 common	34.00 per M
Select O. P. common	39.00 per M
2x4 No. 3 form lumber	26.00 per M
1x4 No. 2 flooring VG	65.00 per M
1x4 No. 3 flooring VG	55.00 per M
1x6 No. 2 flooring VG	65.00 per M
1¼x4 and 6, No. 2 flooring	70.00 per M

Slash grain—

1x4 No. 2 flooring	$50.00 per M
1x4 No. 3 flooring	40.00 per M
No. 1 common run T. & G.	35.00 per M
Lath	8.00 per M

Shingles (add cartage to price quoted)—

Redwood, No. 1	$1.10 per bdle.
Redwood, No. 2	.90 per bdle.
Red Cedar	1.00 per bdle.

Millwork—Standard.

O. P. $110.00 per 1000. R. W., $115.00 per 1000 (delivered).
Double hung box window frames, average, with trim, $6.50 and up, each.
Doors, including trim (single panel, 1¾ in. Oregon pine) $8.00 and up, each.
Doors, including trim (five panel, 1¾ in. Oregon pine) $6.50 each.
Screen doors, $4.00 each.
Patent screen windows, 25c a sq. ft.
Cases for kitchen pantries seven ft. high per lineal ft., $8.00 each.
Dining room cases, $8.00 per lineal foot.

Labor—Rough carpentry, warehouse heavy framing (average) $17.50 per M.
For smaller work average $35.00 to $45.00 per 1000.

Marble—(See Dealers)

Painting—

Two-coat work .. ..35c per yard
Three-coat work ... .45c per yard
Cold Water Painting .....12c per yard
Whitewashing ..... 4c per yard
Turpentine, 75c per gal., in 5 gal. cans, and 65c per gal. in drums.
Raw Linseed Oil—$1.02 gal. in bbls.
Boiled Linseed Oil—$1.05 gal. in bbls.
Medusa Portland Cement Paint, 20c per lb.

Carter or Dutch Boy White Lead in Oil (in steel kegs).

	Per Lb.
1 ton lots, 100 lbs. net weight.. .	.11¾c
500 lbs. and less than 1 ton lots.....	.12c
Less than 500 lb. lots..... ...	12½c

Dutch Boy Dry Red Lead and Litharge (in steel kegs).

1 ton lots, 100 lb. kegs, net wt. 11¾c
500 lbs. and less than 1 ton lots. 12c
Less than 500 lb. lots 12½c

Red Lead in Oil (in steel kegs)

1 ton lots, 100 lb. kegs, net wt..... ..12¼c
500 lb. and less than 1 ton lots 12½c
Less than 500 lb. lots 13c
Note—Accessibility and conditions cause wide variance of costs.

Patent Chimneys—

6-inch	$1.25 lineal foot
8-inch	1.75 lineal foot
10-inch	2.25 lineal foot
12-inch	3.00 lineal foot

Plastering—Interior—

	Yard
1 coat, brown mortar only, wood lath. ...	$0.75
2 coats, lime mortar hard finish, wood lath	.80
2 coats, hard wall plaster, wood lath .	.85
3 coats, metal lath and plaster.	1.30
Keene cement on metal lath	1.30
Ceilings with ¾ hat roll channels metal lath	.75
Ceilings with ¾ hat roll channels metal lath plastered	1.50
Single partition ¾ channel lath 1 side.. ...	.85
Single partition ¾ channel lath 2 sides 2 inches thick	1.50
4-inch double partition ¾ channel lath 2 sides	1.30
4-inch double partition ¾ channel lath 2 sides plastered	3.00
Plastering—Exterior—	Yard
2 coats cement finish, brick or concrete wall	$1.00
2 coats Calaveras cement, brick or concrete wall	1.35
3 coats cement finish, No. 18 gauge wire mesh	1.50
3 coats Calaveras finish, No. 18 gauge wire mesh	1.75
Wood lath, $7.50 to $8.00 per 1000.	
2.5-lb. metal lath (dipped)	.17
2.5-lb. metal lath (galvanized)	.20
3.4-lb. metal lath (dipped)	.22
3.4-lb. metal lath (galvanized)	.28
¾-inch hot roll channels, $72 per ton.	
Finish plaster, $18.90 ton; in paper sacks.	
Dealer's commission, $1.00 off above quotations.	
$13.85 (rebate 10c sack).	
Lime, f.o.b. warehouse, $2.25 bbl.; cars, $2.15	
Lime, bulk (ton 2000 lbs.), $16.00 ton.	
Wall Board 5 ply, $50.00 per M.	
Hydrate Lime, $19.50 ton.	
Plasterers Wage Scale	$1.25 per hour
Lathers Wage Scale	1.25 per hour
Hod Carriers Wage Scale ...	1.10 per hour

Composition Stucco—$1.80 to $2.00 sq. yard (applied).

Plumbing—

From $70.00 per fixture up, according to grade, quantity and runs.

Roofing—

"Standard" tar and gravel, $6.50 per sq. for 30 sqs. or over.
Less than 30 sqs. $7.00 per sq.
Tile, $20.00 to $35.00 per square.
Redwood Shingles, $8.00 per square in place.
Copper, $16.50 to $18.00 per sq. in place.
Cedar Shingles, $9.00 sq. in place.
Recoat, with Gravel, $3.00 per sq.
Asbestos Shingles, $15 to $25 per sq. laid.
Slate, from $25.00 to $60.00 per sq. laid according to color and thickness.

Sheet Metal—

Windows—Metal, $1.75 a sq. foot.
Fire doors (average), including hardware $1.75 per sq. ft.

Skylights—(not glazed)

Copper, 90c sq. ft. (flat).
Galvanized iron, 30c sq. ft. (flat).
Vented hip skylights 60c sq. ft.

Steel—Structural

$110 ton (erected), this quotation is an average for comparatively small quantities. Light truss work higher. Plain beams and column work in large quantities $80 to $90 per ton cost of steel, average building, $95.00.

Steel Reinforcing—

$80.00 to $120.00 per ton, set.

Stone—

Granite, average, $6.50 cu. foot in place.
Sandstone, average Blue, $4.00, Boise, $3.00 sq. ft. in place.
Indiana Limestone, $2.80 per sq. ft. in place.

Store Fronts—

Copper sash bars for store fronts, corner, center and around sides, will average 75c per lineal foot.
Note—Consult with agents.

Tile—Floor, Wainscot, etc.—(See Dealers)

Asphalt Tile—18c to 28c per sq. ft. installed.

Venetian Blinds—

40c per square foot and up. Installation extra.

THE BUILDERS' EXCHANGE OF SAN FRANCISCO STANDARD WAGE SCALE

For mechanics employed on construction work in the Bay Region. Effective September 1, 1937

CRAFT	Journeymen Mechanics
Asbestos Workers	$ 8.00
Bricklayers (6h-5d) ..	10.50
Bricklayers' Hodcarriers (6h-5d)	6.75
Cabinet Workers (Outside) (5d)	8.00
Caisson Workers (Open)	6.40
Carpenters (8h-5d)	9.00
Cement Finishers (8h-5d)	9.00
Cork Insulation Workers (8h-5d)	9.00
Electric Workers (8h-5d)	11.00
Electrical Fixture Hangers	8.00
Elevator Constructors	10.40
Engineers, Portable & Hoisting	9.00
Glass Workers (8h-5d)	9.68
Hardwood Floormen	9.00
Housesmiths, Architectural Iron (Shop) (8h-5d)	9.00
Housesmiths, Architectural Iron (Outside) (8h-5d)	10.00
Housesmiths, Reinforced Concrete or Rodmen (8h-5d)	10.00
Iron Workers (Bridge and Structural) Including Engineers (8h-5d)	12.00
Laborers, Building (8h-5d)	$ 6.00
Laborers, Common (8h-5d)	6.00
Lathers, Channel Iron (6h-5d)	9.00
Lathers, All Others	9.00
Marble Setters (8h-5d)	10.50
Marble Setters' Helpers (8h-5d)	5.00
Millwrights	9.00
Model Makers ($1.50 per hr-6h)	9.00
Modelers ($2 per hr-6h)	12.00
Model Casters	7.20
Mosaic and Terrazzo Workers (Outside)	9.00
Painters (7h-5d)	8.50
Painters, Varnishers and Polishers (Outside)	9.00
Pile Drivers and Wharf Builders	9.00
File Drivers' Engineers	10.00
Plasterers (6h-5d)	9.00
Plasterers' Hodcarriers (6h-5d)	7.50
Plumbers (8h-5d)	11.00
Roofers, Composition (8h-5d)	9.00
Roofers, All Others (8h-5d)	8.00
Sheet Metal Workers (8h-5d)	10.00
Sprinkler Fitters	10.00
Steam Fitters (8h-5d)	$11.00
Stair Builders (8h-5d)	9.00
Stone Cutters, Soft and Granite (8h-5d)	8.00
Stone Setters, Soft and Granite	12.00
Stone Derrickmen	9.00
Tile Setters (8h-5d)	10.50
Tile Setters' Helpers (8h-5d)	6.50
Tile, Cork and Rubber (8h-5d)	9.00
Welders, Structural Steel Frame on Buildings	11.00
Welders, All Others on Buildings	9.00
Dump Truck Drivers, 2 yards or less	6.00
Dump Truck Drivers, 3 yards	6.50
Dump Truck Drivers, 4 yards	7.00
Dump Truck Drivers, 5 yards	7.00
Dump Truck Drivers, 6 yards	7.50
Truck Drivers of Concrete Mixer Trucks:	
2 yards or less	6.50
3 yards	7.00
4 yards	7.50
5 yards	7.50
6 yards	8.00

GENERAL WORKING CONDITIONS

1. Eight hours shall constitute a day's work for all crafts except as otherwise noted.
2. Plasterers' Hodcarriers, Bricklayers' Hodcarriers, Roofers' Laborers, and Engineers, Portable and Hoisting, shall start 15 minutes before other workmen, both at morning and at noon.
3. Five days, consisting of not more than eight hours a day, on Monday to Friday inclusive, shall constitute a week's work.
4. Transportation costs in excess of twenty-five cents each way shall be paid by the contractor.
5. Overtime shall be paid as follows: For the first four hours after the first eight hours, time and one-half. All time thereafter shall be paid double time. Saturdays (except Laborers) Sundays and holidays, from 12 midnight of the preceding day, shall be paid double time.
6. On Saturday Laborers shall be paid straight time for an eight-hour day.
7. Where two shifts are worked in any twenty-four hours, shift time shall be straight time. Where three shifts are worked, eight hour's pay shall be paid for seven hours on the second and third shifts, allowing one-half hour for lunch.
8. All work, except as noted in paragraph 9, shall be performed between the hours of 8 a.m. and 5 p.m.
9. In emergencies, or where premises cannot be vacated until the close of business, men then reporting for work shall work at straight time. Any work performed on such jobs after midnight shall be paid time and one-half up to four hours of overtime and double time thereafter, provided, that if a new crew is employed on Saturdays, Sundays or holidays which has not worked during the five preceding days, such crew shall be paid time and one-half.
10. Recognized holidays to be: New Year's Day, Decoration Day, Fourth of July, Labor Day, Admission Day, Thanksgiving Day, Christmas Day.
11. Men ordered to report for work, for whom no employment is provided, shall be entitled to two hours' pay.

ENGINEER DESCRIBES PROGRESS IN STEEL HOUSE CONSTRUCTION

HOUSES built of steel provoked a lively round-table discussion at the recent annual convention of the American Institute of Steel Construction at White Sulphur Springs, West Virginia. The discussion was led by F. T. Llewellyn, research engineer of the United States Steel Corporation.

"The first cost of steel housing is nearly always more than for other methods now in use," Mr. Llewellyn explained, "but this factor promises to be more than offset in after years because the non-shrinkability of steel gives a more efficient structure which requires lower maintenance costs.

"Of paramount importance in considering the use of any material for framing is the question of possible changes in dimension during the life of a residence," he added.

"Any perceptible shrinkage of the framing material is attended by such evils as cracking of tile and plaster, the misfit of doors and windows, and the opening of joints in the walls, resulting in the infiltration of air and moisture which runs up heating costs."

"The use of adequate steel framing will either avoid or greatly reduce all of these troubles and will give positive assurance of stability and low maintenance cost throughout the life of the structure," Mr. Llewellyn predicted.

More than 1400 homes using steel as a major building material have been built in the United States, Mr. Llewellyn estimated. Some 3000 others have used steel to lesser degree.

With the small steel house requiring five tons of steel, our annual demand of 300,000 homes in the country makes a potential market of 1,500,000 tons of steel every year.

Steel construction would eliminate 70 per cent of residential fires which start below the first floor and 15 per cent more which start on the roof, but this is not an outstanding advantage because residential fires are rare and insurance rates already quite reasonable, it was pointed out.

Part of Mr. Llewellyn's paper was devoted to dispelling any belief that it will be an immediate panacea for all of our residential ills. "Strength of steel as demonstrated in buildings and bridges along with unwarranted publicity," he said "given to model steel houses built in the past has helped to create in the minds of the public the false impression that the all-steel home was just around the corner within the reach of everybody's pocketbook."

As his contribution to this viewpoint, Mr. Llewellyn spent many months in collecting data on the characteristics of seventeen types of steel houses. For the first time on record, he gathered these together in a paper accompanied by comprehensive descriptions and detailed dimensional drawings.

According to Mr. Llewellyn, steel is seeking its own level of usage in housing.

While several hundred systems of steel residence construction were studied by Mr. Llewellyn, only 17 representing typical applications of light-gage flat rolled steel of not more than $\frac{1}{8}$-inch thickness, were selected for illustration. Three of these systems are in use on the Pacific Coast. Details of any one of them may be obtained without cost from the Columbia Steel Company.

STEEL COMPANY SPONSORS MOTION PICTURES OF BRIDGE

A new motion picture entitled "Building the Golden Gate Bridge" has been completed by Bethlehem Steel Company. It is a talking picture with descriptive lecture on the sound track.

The reel gives a complete story of the construction of this world famous bridge, beginning with the arrival of steel on the site. The succeeding scenes follow faithfully the erection schedule.

The huge steel towers, 746 feet high, that support the cables, are seen to rise from their foundations as the steel is assembled and placed in position. Construction of the superstructure for the roadway on the 4200-foot suspended span is depicted in detail. Of particular interest are the many special methods required in handling the steel due to the great size of the structure.

Many difficult problems in the construction of the Golden Gate Bridge had to be solved and the methods used are discussed in the descriptive lecture. While it is a construction picture and possibly of greatest interest to groups of engineers and others connected with the construction industry, there is sufficient dramatic appeal in many of the scenes to make it unusually attractive to the layman as well.

SEATTLE TO HAVE EXPOSITION

Now it's Seattle that proposes to hold an exposition. Following San Francisco and New York will come the Los Angeles Fair, then in 1942 a Pacific Northwest Centennial Exposition in Seattle.

The exposition is to commemorate the coming of the first pioneer wagon trains over the Old Oregon Trail in 1842. In the same year the Grand Coulee Dam, the greatest man-made structure in history, is expected to be completed, which will provide a great theme for celebration.

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NEW TYPE OF STORE FRONT CONSTRUCTION

Persistent rumors of a new Libbey-Owens-Ford product that would offer basically new principles of store front construction and design have been confirmed by that company's announcement of Extrudalite, an entirely new line of metal store fronts.

The result of intense research and development, Extrudalite provides amazing stability for glass fronts of any kind, and at the same time fully meets the need for metal sash designed especially to be used with the newer types of flat or structural glass, such as Vitrolux and Vitrolite.

Extrudalite was developd on the principle that the sash is the key member of metal store front construction. In creating it, Libbey-Owens-Ford technicians sought to produce a metal sash strong enough to be self-supporting and able to retain its own perfect alignment for the glass to rest against. This was accomplished by using solid extruded metal from which heavier sections can be made to closer tolerance than are possible when the sash is rolled or drawn.

Also, it was desired that the sash should hold the glass firmly yet safely, while providing a cushioned support that would absorb shocks and vibrations and compensate for expansion and contraction. This problem was solved by breaking away from previous standards of metal sash construction. Instead of placing a cushioning spring against the glass itself, Extrudalite cushions the rigid members which hold the glass. In this way, the glass is held in a firm, rigid, yet velvety grip by cushioned, indirect pressure which is evenly distributed instead of being concentrated in the area adjacent to each tension point.

Although Extrudalite is fundamentally new and different, its installation is easy and fool-proof and does not differ greatly from proven standards of setting. Instead of leaving it to the installation man to determine the correct pressure for holding the glass, merely by the "feel" of the set screws, Extrudalite eliminates guess work by automatically controlling exactly the right pressure.

When setting glass in Extrudalite sash, the installator has only to run down the set screws until they strike the positive stop. Regardless of the thickness of the glass, correct pressure is evenly applied. Interlocking teeth in the base member and in the clip member attached to the face piece makes this possible.

The amount of cushioned pressure thus applied to the glass is pre-determined and it is impossible to exert too much or too little. The direct pressure exerted by the set screws is transferred from the rigid clip lever to the cushioning spring. The spring cushions the pressure and transfers it to the rigid face piece which applies it evenly all along the face of the glass.

Reversely, the spring acts as a shock absorber and absorbs all shocks, vibrations and expansions. It likewise acts as a stabilizer by throwing pressure back against the glass under contraction.

These principles of pressure transformation, distribution, and control are positively revolutionary in store front construction. They tend to eliminate glass breakage from any and all sash failure causes.

According to the manufacturer, Extrudalite vertical-corner, reverse, and division bars are strong enough to withstand abnormal wind pressure without glass breakage, yet are not so bulky as to obstruct vision. As in the sash, all operating parts are concealed, thus providing a trim of striking, ultra-modern beauty.

The vertical-corner bars automatically adjust themselves to the angles of the glass and hold it in a definite, cushioned grip.

A very important feature is the Extrudalite store fronts, when installed in sections as called for in standard L-O-F detail sheets, are completely weather and water proof. From top to bottom there is no possible way for water to get inside the show window or into the framing which supports the facing material.

Extrudalite store fronts are as nearly air-tight as possible. They dust-proof the display window rather than provide holes for doubtful ventilation. Moisture from condensation or window washing is taken care of with a chamois sponge, but standard drain holes can be furnished if desired.

Extrudalite will be sold by glass jobbers exclusively. It comes in three sizes, each competitive in its price range and each offering a complete line of all units necessary for any type of metal store-front construction. In addition, Extrudalite includes all the latest features contained in sills, jambs, Vitrolite trim moulding, coping, soffit sections, hinged ventilators, showcase doors, pilaster coverings, and also offers a complete line of extruded tubular doors, transoms, and frames.

Due to the flexibility of Extrudalite and its method of manufacture, the company is in a position to offer architects a highly specialized service. Anything that an architect may care to develop in the way of a specially designed section can be incorporated into the regular line at minimum cost and held exclusively for his use. This also applies to chain store groups.

In appearance, Extrudalite offers a striking departure from conventional metal store front design. By giving each distinct area a slight radius, and by "breaking up" the surface into a series of graceful reeds and cascades, the designers of Extrudalite have eliminated the optical illusions which make plain, flat metal surfaces look wavy. Also, its design does away with the necessity of frequent cleaning.

ARCHITECTS TO EXHIBIT WORK

An exhibition of architectural work covering the State of Washington, is to be shown under the sponsorship of the Washington State Chapter, A. I. A., and the Master Builders Association of Seattle. The exhibit will be held in the quarters of the Central Housing Information Bureau, 1910 Fourth Avenue, Seattle. Seventy-five active and associate members of the Chapter have been invited to display their work, particularly residential.

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STATE BOARD ADOPTS NEW RULES

Prior to the State convention at Santa Barbara, the California State Board of Architectural Examiners, in order to clarify points pertaining to the ethics of the architectural profession, adopted the following rules, approved by Attorney General U. S. Webb, as being consistent with the "Act to Regulate the Practice of Architecture.":

"The Board is empowered to reprimand an architect or suspend or revoke the certificate of an architect if, after a reasonable opportunity to be heard has been afforded him, the Board finds:

A. That such certificate has been obtained by fraud or misrepresentation.

B. That the holder of such certificate is falsely impersonating an architect or former architect of a like or similar name.

C That the holder of such certificate has aided or abetted in the practice of architecture any person not authorized to practice architecture under the provisions of this act.

D. That the holder of such certificate has been guilty of deceit or gross incompetency or dishonesty in the practice of architecture.

E. That the holder of such certificate has affixed his signature to plans, drawings, specifications or other instruments of service which have not been prepared by him or in his office or under his immediate responsible direction, or has permitted his name to be used for the purpose of assisting any person not an architect in evading the provisions of this Act."

A. An architect is a person who holds a certificate to practice architecture in the State of California (See Sec. 9 An Act to Regulate the Practice of Architecture).

B. An architect may form a partnership with a person or persons not an architect or architects. The name of the architect of such partnership shall appear on the plans, drawings, specifications, and other instruments of service as 'architect" and the title of the partner or partners shall be clearly stated

C. Any person who forms or has formed a bona fide partnership with one who is not an architect, shall notify the Board in writing, setting forth the name or names and titles of the members of said partnership, and shall receive an acknowledgement in writing, and upon dissolution of said partnership, the Board shall likewise be notified.

D. Failure to notify the Board in writing of the formation of a partnership shall be prima facie evidence that no partnership exists. Likewise, failure to notify the Board in writing of the dissolution of the partnership, shall be prima facie evidence that the partnership still exists.

HOSPITAL ADDITION

A $250,000 addition is planned to the Kern County Hospital from drawings by Architect Charles H. Bigger of Bakersfield.

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CAUSES OF FORECLOSURES

Unamortized lending and improper appraisals head the list of principal causes of the abnormal number of foreclosures in recent years in a survey just completed by Colonel J. B. Chaffey, vice-president of California Bank, Los Angeles, and an authority on real estate loans.

Fifty-six persons experienced in lending on real estate, including heads of banks, insurance companies, title companies and professional appraisers of national reputation were invited by Colonel Chaffey to express their opinions concerning the causes of foreclosures. While the survey itself was more or less confined to Southern California, the results are thought to be fairly representative of experience throughout the United States generally.

The tenor of the replies indicated that everyone felt the depression itself primarily responsible, but subject to that explanation, opinions as to the immediate causes were varied.

Forty-one replies listed "unamortized lending" among the first three causes of foreclosures, and nineteen gave it as the first reason.

"Improper appraisals," with all their ramifications, were listed among the first three reasons by thirty-eight lenders and twenty thought them to be the primary cause of foreclosures.

Twenty-four persons mentioned "failure to give sufficient weight to the borrower's financial standing and integrity" among the first three reasons, but only two thought this to be the main cause. Twenty-four replies likewise mentioned "pressure by lending institutions in an effort to keep liquid," but only two gave that as the No. 1 cause.

"A change in the public's attitude toward the payment of debts hastened by the advent of the H. O. L. C.;" was listed among the first three causes by twenty-five of those questioned, but only one considered that of paramount importance. In an even lesser degree, "relaxing the collection program," and "competition for loans between leanding institutions" were held responsible for foreclosures.

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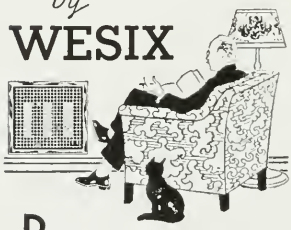

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BUILDING OFFICIALS MEET

At a recent meeting of the Pacific Coast Building Officials Conference held in Los Angeles, opportunity was given for study of the 1937 edition of the Uniform Building Code by all building officials. Suggested changes were referred to committees for consideration and discussion. Two whole days were given over to these committee meetings and all proposals received the careful scrutiny of architects and engineers as well as inspectors. There was unanimity of opinion that the standards of construction embodied in the Uniform Code should be consistently maintained in the interest of public safety. There will be no "letting down the bars."

Such proposals as require technical investigation will be taken up by the Research Department of the Conference. Walter Putnam, building superintendent of Pasadena, who has been head of this department, will continue at that post during the coming year. During the past year, the department completed specifications regulating the installation of Insulux glass blocks. It now has under way an investigation of stabilized adobe building blocks with a view to preparing specifications regulating this type of construction. Tests of these blocks which are being made at Stanford University will be completed in the next three or four months. Results of these tests will be made the basis of the department's recommendations.

Investigation will probably be extended during the coming year to a new automatic cut-off valve to be installed in gas mains for protection against fire in event of serious damage to buildings by earthquake. A new unit system of reinforced concrete construction will probably receive attention by the department also. A research program sponsored by the National Common Brick Manufacturers' Association is contemplated. The task of preparing specifications to govern reinforced brick construcution will be assigned to a special committee.

A committee headed by E. U. Roussell, chief building inspector of Oakland, will continue its work of codi-

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fying in a separate volume all Uniform Code regulations governing construction of school buildings. This volume will include Appendix A of the Engineering Department, State Division of Architecture, recently revised, for guidance of architects and engineers in designing earthquake resistant construction.

Frank H. Clough, city engineer and building inspector of South Pasadena, was elected president of the Conference for the coming year. E. U. Roussell, chief building inspector of Oakland, was elected vice-president and L. A. Ferris, building inspector of Reno, Nevada, second vice-president. The last past president is A. J. Hurley of Richmond.

HEATING EXPERTS TO CONVENE

Winter heating of homes, public buildings, and factories, and air-conditioning on a year 'round basis, are themes which will be coordinated and amplified at the Fifth International Heating and Ventilating Exposition. This event, otherwise known as the Air Conditioning Exposition, will be held at Grand Central Palace, New York, during the week of January 24 to 28, 1938. It will be under the auspices of the American Society of Heating and Ventilating Engineers, whose 44th annual meeting will be held during this same week in New York.

Furnaces, burners, and boilers, now increasingly referred to as winter air-conditioning units, will constitute an important section of the Exposition. They will be demonstrated in terms of the advantages of the various fuels used in their operation—coal, gas, and oil. Everywhere the tendency toward fuel economy and streamlined cabinet design will be emphasized. In contrast to the early years of the industry, one manufacturer of boilers, for oil, gas, stoker or hand firing, calls attention to new jacketed design decorated in two-tone blue with red striping. Burner units in practically all sizes reflect the trends to efficiency and economy of operation and condensed modern construction.

Water heating, winter and summer, for homes, offices, apartments, hotels, etc., will be featured by many

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exhibitors at the Heating and Ventilating Exposition. Automatic operation, fuel economy, and flexibility with respect to space areas and the weather, will be points most emphasized. One exhibitor will show indirect water heaters, tankless water heaters, built-in boiler units, tank units, mixing valves, and fittings for one-pipe hot water systems. Some of the new fittings are said to reduce substantially the cost of a hot water installation.

Tankless heaters will also be on display at the Exposition.

The latest equipment for steam heating of homes, buildings, factories, and institutions, such as hospitals and schools, will be demonstrated. Included will be vacuum and vapor heating systems, boiler protectors, process steam traps, and radiation accessories of every description. Improvements in low pressure steam heating will be the subject of several exhibits.

No air-conditioning system is better than its air distribution. Recognizing this fact, the Fifth International Heating and Ventilating—Air Conditioning—Exposition will call attention to the latest types of air diffusers. The triple functions of supplying and extracting air, and of mixing room air with incoming air will be featured. Dynamic exhibits using confetti will demonstrate the even diffusion to be obtained with manipulated air currents.

The attic fan system of household ventilation will be among the modern specialties featured by exhibitors at the Heating and Ventilating Exposition. Attic ventilator "packages" will include the essential parts ready for assembly; fan, vent box, ceiling grille, switches, pulleys, and all fittings. Throughout the whole range of fans, blowers, and exhausters, the trends will be toward quietness of operation and economy during continued use. Design trends will emphasize compactness and streamlining.

1939 EXPOSITION NOTES

Harry H. Daley, who has been identified with home building and campaigns for the promotion of better home equipment, has been ap-

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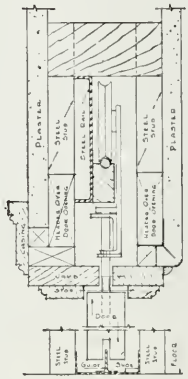

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pointed Director of the Homes and Gardens Division of the 1939 Exposition. Two of the largest structures of the $50,000,000 World's Fair of the West, will be devoted to Homes and Gardens. In addition a large outdoor area has been allotted to model homes.

* * *

More than 1,000 square feet of exhibit space in the Homes and Gardens Building have been taken by the Pittsburgh Plate Glass Co. Carrara structural glass, glass blocks, and many novel uses of glass for interior and exterior finishing will be shown.

An elaborate exhibit of paint, varnish, lacquer and enamel is expected to be shown. The W. P. Fuller Co., pioneer San Francisco firm and agent for the Pittsburgh Plate Glass Co. for the past forty years, will cooperate in the display.

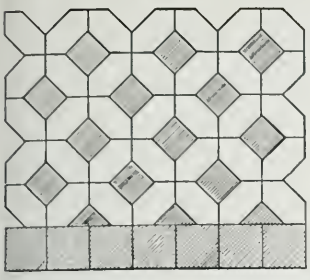
* * *

Novel and important uses of stainless steel, particularly in the kitchen, bathroom and living room of the modern home, will be displayed at the Exposition.

In the large outdoor area of the Homes and Gardens Division which will be devoted to model homes, rooms of stainless steel are expected to be shown. A modernistic kitchen with steel floor and ceiling is one of the novel features planned.

* * *

Collections of ceramics from all over the world are expected to be shown at the 1939 Exposition. Displays of ancient Oriental vases, the works of celebrated European potters, and South American ware of indescribable beauty are planned for the Fine Arts Building.



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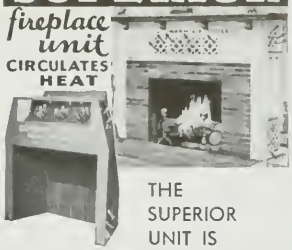

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Of the Architect and Engineer, published monthly at San Francisco, Calif., for October 1, 1937.

State of California } SS.
City and County of San Francisco }

Before me, a notary public in and for the state and county aforesaid, personally appeared L. B. Penhorwood, who, having been duly sworn according to law, deposes and says that she is the Business Manager of The Architect and Engineer, and that the following is, to the best of her knowledge and belief, a true statement of the ownership, management (if daily paper, the circulation), etc., of the aforesaid publication for the date shown in the above caption, required by the Act of August 24, 1912, as amended by the Act of March 3, 1933, embodied in section 537, Postal Laws and Regulations, printed on the reverse of this form, to wit:

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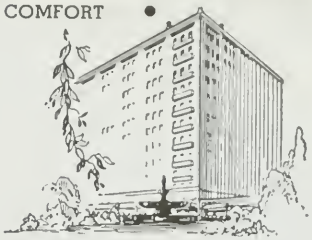

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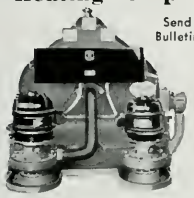

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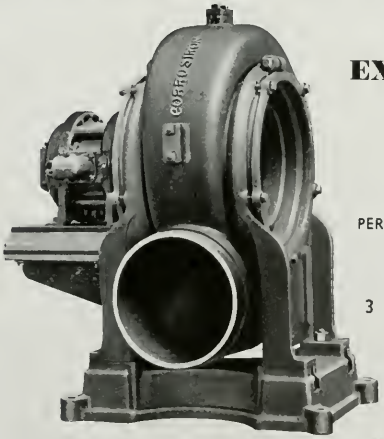

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FRONTISPIECE — APARTMENT HOUSE ON TELEGRAPH HILL, SAN FRANCISCO

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Notes and Comments

Leaders in the construction industry and government housing officials made a splendid start toward developing a practical program to stimulate residential building by private enterprise at the Chamber of Commerce conference November 17 and 18 at Washington. Papers by leading authorities on housing are published in this issue and deserve careful reading.

The conference discussed plans of the private building industry to widen and stimulate the market for small house construction.

These plans include not only industry efforts to provide houses which will sell within the reach of an increasingly large number of families, but also efforts to develop the market for residential rental properties. There are many families who for one reason or another can not own homes. More than fifty per cent of the present dwellings in urban areas are rented. This is a market which, outside of the more expensive apartment house projects, up to this time has not been given serious attention in this country. There is experience to indicate that properly developed and protected residential rental properties present an important field for sound investment.

The opportunities for such investment must of course be examined in each community by those familiar with local conditions.

* * *

It is fortunate for careless builders that the penalties of the ancient code of Hammurabi are not now in effect. Under the code of Hammurabi, King of Babylon, more than 4,000 years ago, if construction was not sufficiently sound to withstand ordinary wear and tear, the contractor was forced, at his own expense, to repair whatever damage resulted.

And if the building collapsed, causing the death of the owner, then the contractor was put to death. The construction of a house in Babylon in the year 2,000 B.C. was taken seriously and failure to construct for safety and durability was fraught with dire consequences.

While none of us would suggest the imposition of such penalties as Hammurabi imposed, we must find more adequate means of assuring to the home owner sound construction and more adequate security for his investment.

There is every prospect that in the years ahead, greater emphasis will be placed on the necessity of seeing that the home is really well designed and constructed, and that those lending agencies which exert every possible effort to aid the home owner in getting full value will have most of the worth while loans. This campaign against shoddy construction should go on indefinitely.

* * *

Property owners and realty dealers are conjecturing as to what is ahead in the renting business. Rents have advanced materially since the depression and building managers (offices and apartments) have been able to get what they have asked, but since the recent stock market recession and the accompanying declines in certain lines of business, the rental outlook has taken on a new complexion. Its a difficult matter right now to determine just what the future is going to offer. Editorial comment in the November issue of Buildings and Building Management would appear to be none too optimistic. We quote:

"Owners and managers are asking themselves how important is the much publicized contraction of stock values and of business activity. Does it threaten a return of 'depression' conditions, or is it a temporary readjustment that will not affect for long the improvement in real estate occupancy and rental statistics under way for the last year or so? Most experts incline to the latter view. Optimism, modified by a number of 'ifs' is indicated by a cross section of opinion. Level-headed appraisal of the realities of the situation should be undertaken to save useless worry.

"Some of the factors that must be considered in judging what to expect are: gains in occupancy and rates during the past year or so; volume of new inquiries and renewals now as compared with last year; the relation between increased operating costs and gross income; income trends in those classes of the population served by the industry; the general outlook for business, and the political situation, both national and international.

"The last two of these give pessimists their principal arguments. But if other factors are balanced against them the outlook becomes considerably lighter. The man who bases his calculations entirely on fear of what might happen seldom qualifies as an inspired prophet.

"Owing to obvious differences in apartment and office building conditions the two require separate consideration. In both occupancy and rate increases apartments have, in general, made more progress than office buildings.

"Office building occupancy increased fairly generally throughout the country as a whole during the past year. A few cities remained practically stationary. In others increases averaged between 2 and 5 per cent. A very few report even better percentages.

"While rents showed a less definite upward trend, there is plenty of evidence that they stiffened in some cities very slightly, in others as much as ten per cent or more. Any specific estimates in this regard are apt to be misleading owing to differing conditions in different properties, but the trend at least can be discerned, and it was definitely upward during the early months of this year."

* * *

Labor troubles have undoubtedly been a consideration with the speculative builders. Several Southern California concerns that ordinarily have from twenty to thirty houses under construction at a time, have cut their operations to three or four houses, fearing the tie-ups which might leave a number of half-built houses basking in the sunshine. However this state of mind is less prevalent with builders of small houses, particularly those constructed of prefabricated materials which go together so quickly that labor tie-ups are less of a menace.

Happily, most of the builders are quite optimistic about the situation.

"This let-up is a wholesome thing," said one of them who has been in the game for twenty years. "Materials prices were getting out of hand and it took a slump to bring them down. It was costing five dollars a square foot to build, as compared to three dollars right after the depression. About four dollars is all the people can afford to pay in this area." (Southern California.)

Another item is that the level of rising rents has lagged far behind the increase in the cost of building throughout the State. Both the financial people and the builders expect the next move to come from the land-

[Please turn to Page 74]

Fred L. Confer
Architect
whose work is shown
in this number,
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BUILDING TRENDS AND NEW DEVICES

GLASS FOR BUILDING PURPOSES

Addressing a group of prominent architects and building engineers in Philadelphia recently Harold M. Alexander, head of the Architectural Service Department of the Libbey-Owens-Ford Glass Company, predicted a definitely practical but arrestingly picturesque architectural future for the country.

Mr. Alexander, chief speaker at a dinner sponsored by the Producers Council, at which his company was host, described some of the latest achievements of glass technicians, and demonstrated several interesting applications of flat and structural glass which recent developments in this field have made possible.

Of particular interest was Mr. Alexander's discussion of translucent Vitrolux, a new color-fused, tempered plate glass that is approximately five times stronger than regular plate glass, is highly resistant to thermal shock, and can be twisted and bent to a surprising degree.

One of the seemingly endless applications of this new glass, which Mr. Alexander described, is the manner in which it is used for translucent lighting. Buildings faced with translucent Vitrolux can be made to glow with colorful luminosity, simply by concealing electric bulbs behind the glass and permitting their light to shine through. The excellent diffusing qualities of translucent Vitrolux permit soft, even distribution of light over its entire area and the result is a new type of architecture, filled with interesting possibilities for arresting merchandising ideas.

For some time architects have been steadily advancing toward increased use of color and light, particularly in store fronts and building exteriors, Mr. Alexander said. But full expression of this definite trend in modern building design awaited the development of a translucent material sufficiently resistant to thermal shock to stand the heat of illuminating bulbs on one side, and the cold of rain or snow against the other side, without breaking.

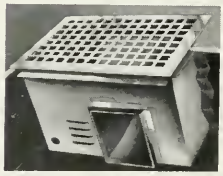
Vitrolux, Mr. Alexander pointed out, is unique in that no other material so fully meets the requirements of luminous architecture. As a result of its development, the scope of this type of architecture is being greatly increased.

For instance, store fronts of arresting eye-appeal, and of a type of beauty usually confined to costly interiors, are now achieved by covering ordinary walls of brick or other material with an outer wall of Vitrolux, in panes up to four feet square. Such walls of glass, backed with illumination, are made possible by the unusual strength of tempered plate glass.

Large squares of such glass can be used around entrance doors and store windows, and the idea can be carried upward to any desired height, so that at night the structure becomes a beacon of soft, glowing color.

FORCED DRAFT VENTILATION FOR KITCHENS

A new type kitchen ventilator "Trade-wind Clipper Blower" is being marketed by a Los Angeles firm. Available as a complete unit, including motor and wheel, the ventilator is ready for electrical connection to plug outlet in motor compartment, to be installed between joists, over kitchen range. A small dimension duct is run out of doors. Centrifugal, squirrel cage wheel generates pressure to force air rapidly through ducts. It is quiet in operation, compact with housing built of welded steel, aluminum alloy wheel and chromium plated grille. Descriptive bulletin for A. I. A. filing is available from the manufacturers.



PREFABRICATED HOUSE OF WOOD PANELS

A new demonstration house of prefabricated wood panel had its first showing on the occasion of Mrs. Franklin D. Roosevelt's visit to the Forest Products Laboratory, November 6. Interest was manifested by Mrs. Roosevelt in the complete living arrangements provided, the type of construction as related to low-cost housing projects, and the speedy erection possible with the unit panel system.

The house is one story, 24 by 36 feet in floor area, and has a large living room, kitchen, two bedrooms, bath, utility room, and halls, with garage adjoined. Its completion is to be followed by construction of a two-story house on the same system with flat and gable roofs that can be used alternately.

As in previous examples, the structural units of the completed house are framed panels with surfaces of firmly glued plywood, built to standard lengths and a width modulus of 4 feet.

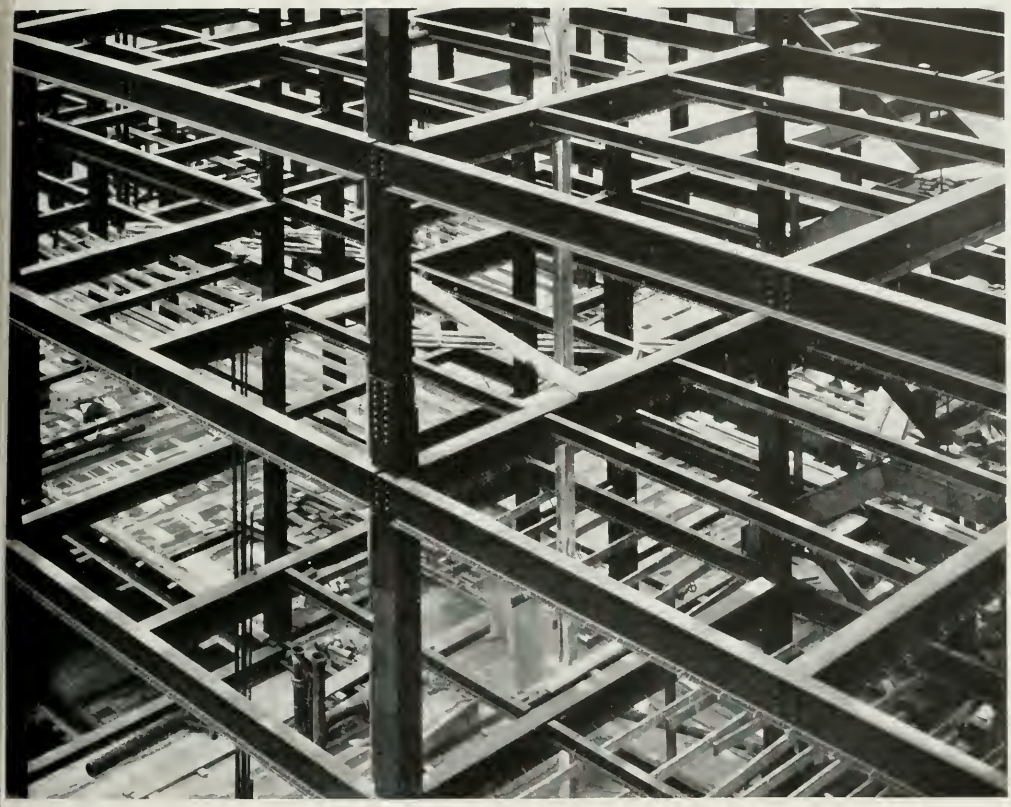
"MASTER" SIGN REFLECTOR

This new streamlined display board reflector incorporates the famous "Master" sign reflector superiorities of illumination together with a new angle-hood, vertical socket construction which permits direct lamp service from the ground—eliminating the use of ladders.

The master reflector provides a straight line cut off at top of the board which practically eliminates light spillage, scallops and shadows. Of compact construction and shaped to contours which blend perfectly with the design of even the most modern "streamliner" boards, it offers no obstruction to easy reading of the message day or night.

Conduit is led straight into the angle-hood, no bends being necessary while the lamp (75-150 watts) hangs base up in a vertical plane. The reflector is easily removable by loosening two screws in the hood.

Basis OF DESIGN FOR ECONOMY



where live loads are light

WHEREVER live load ratings are relatively low, Bethlehem Light Sections open the way to definite economies in the use of steel in floor construction and in all types of upper-tier work. In apartment buildings, hotels, office buildings, hospitals and similar structures, their properties make it possible to keep floor slabs within economical limits and materially reduce the total tonnage of steel.

Bethlehem Light Sections were developed to supplement the familiar Wide-Flange Sections and to be used wherever loads do not utilize the full capacity of regular sections of depth called for by the span. They are rolled of the same grade of steel and to essentially the same shapes as Wide-Flange Sections. They have ample thickness of metal in web and flange to comply with all building code requirements and to be eligible for all first-class construction. In addition to their use as floor beams, Light Sections are used effectively as columns in upper stories, as struts between columns and as purlins in roof construction, particularly of industrial buildings.

Complete data and advice of Bethlehem engineers on the most efficient and economical use of Bethlehem Light Sections are always available to interested architects

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BETHLEHEM STEEL

BETHLEHEM STEEL COMPANY

THE PORCELAIN enameled office building illustrated here is the new home of Davidson Enamel Products Company at Lima, Ohio. Douglas Andrew, architect, designed the building to show the wide variety of finishes, colors and designs available in porcelain enamels for architectural uses. He achieved distinctions in well-balanced fluted parts, rounded corners, embossed side panels and two decorative plaques.

The plaques show nine colors, ranging from chocolate to ivory. Areas above and below the window course are in semi-mat stipple finish of a light buff color. The window course is light tan with snap-on moldings. and the area about the doorway is ivory.

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PULSE OF THE READER

THE GOVERNOR EXPLAINS

Dear Editor:

In the issue of The Architect and Engineer for October 1937 a communication appears on page 14 under "Pulse of the Reader" and over the signature of Mr. John S. Seibert of San Diego, California, referring to an article in your August issue regarding the two State buildings recently completed in Sacramento, one for the Department of Public Works and the other for the Department of Motor Vehicles.

Please find enclosed herewith a copy of a statement bearing upon the fact that these two buildings were constructed without extra cost to California taxpayers. The information contained in this statement would likely be of interest to Mr. Seibert and possibly also to others.

Sincerely yours,
GEO. B. McDOUGALL

[Editor's Note—The statement referred to by State Architect McDougall follows:]

"How the State Department of Public Works is able to construct a $750,000 building to house its various Divisions without any extra cost to California taxpayers was revealed by Governor Frank F. Merriam at the ceremonies attending the laying of the cornerstone of the new building in Sacramento.

"The Governor called the working out of the plan whereby the Department of Public Works will erect an edifice out of its own funds without a legislative appropriation or use of any tax monies or gas tax funds a bit of skilled financial planning which will enable not only the Department of Public Works, but the Department of Motor Vehicles as well, to pay for two splendid buildings in less than five years.

"Both these departments have outgrown their present quarters and the need for new housing facilities for them has been recognized for two years. Director Earl Lee Kelly of the Department of Public Works broached the plan for a new building to Governor Merriam and as a result of conferences between these two and Arlin E. Stockburger, Director of Finance, there developed the plan which led up to the laying of the cornerstone for the future Public Works headquarters building.

"The new structure will be financed in part from the sale of the Department's equity in the present Public Works Building, and the remaining cost will be amortized over a period of years by means of a rental charge, which, including operating expenses, will be considerably less than half the rate per square foot which normally would apply on buildings of the type of the new structure.

"In September, 1926, the State agreed to lease for ten years the present Public Works Building at a monthly rental of $7,415.02, or a total rental of $889,802.40. It also was provided that the State would have the privilege of purchasing the building and site at a cost of $669,692. The State, through the Division of Highways, exercised this option in September, 1927, and by February, 1929, had completed purchase of the structure the final cost being $597,716.67.

"Other State agencies rented offices in the building, including the Department of Motor Vehicles. Equities of this agency in the building accumulated to such an extent that by the end of this month its equity will amount to $283,592.71. At this rate, with its rentals accruing as equity the Department of Motor Vehicles within a few years would have owned the building and the Department of Public Works would have had to begin paying rent to its sister organization.

"Forseeing this situation, Director Kelly proposed to the Governor that his Department erect its own building and pay for it out of the sale of its equity in its present structure and the sevings in rentals which would be effected. The Department of Motor Vehicles decided to do likewise and also own its own building.

"The State will use the present Public Works building to house the California Unemployment Reserve Commission."

STOP TAX RAIDS

Dear Editor:

The constant raids made upon the gasoline tax and motor vehicle funds for purposes other than those for which the funds are being applied, today represent the greatest threat against the orderly expansion of our California highway system.

If we are to maintain and improve our 13,000 miles of State highways outside of cities and maintain and improve our highways through cities, diversions must be prevented.

It is possible for the Legislature to divert, as has been done in other States, highway funds for such other expenses as aviation, propagation of oysters, referendum expense, harbors and docks, and as has been done in the State of Oklahoma, for field and garden seeds. Diversions in other States have increased in the four years—1930 to 1933 from $13,000,000 to $53,000,000.

You know that the increased automobile registration and the congestion on our highways make it necessary that the present tax be maintained. That is why we must be sure to do all we can to defeat the initiative petition now being circulated, calling for a reduction of the gasoline tax from 3 cents to 2 cents. If this initiative passes, many of the counties would find their gasoline tax funds reduced to such a small amount that it would be necessary for them to reestablish or to increase personal property tax for road purposes.

There is a big job to be done. It is always more effective if leadership for a fight of this character comes from a disinterested source. Then no one can be accused of attempting to serve self-interest. The California State Chamber of Commerce is the organization to do this job for us. It is influential and has a closely knit organization that reaches into every part of California.

O. FREDERICKSON
San Francisco, Nov. 19.

A BOUQUET

Dear Editor:

Could you send me two extra copies of The Architect and Engineer for November, 1937.

I want to compliment you on the way the Santa Barbara convention is handled in this issue.

Very truly yours,
LOUIS J. GILL, Architect
San Diego, Nov. 18, 1937.

AMAZING THE WORLD

Dear Editor:

Picking up a copy of "Building," leading architectural publication in Australia, I noticed a number of complimentary paragraphs about our two new bridges under the caption "Striking Developments Abroad," meaning, of course, the United States. The author, Mick Grace of Grace Bros., had just returned home after nine months travel in America. "The most outstanding engineering achievements in the United States to my mind," he says, "are the San Francisco Bay Bridge and the Mersey Tunnel. Also their road building. There are about 3,000,000 miles of roads in America and the rapidity with which the authorities tackle their traffic problems is amazing. For instance, two huge bridges at San Francisco went up almost simultaneously. And on top of that San Francisco, just to show its capacity for spectacular achievement, is building a man-made island for a World's Fair in 1939."

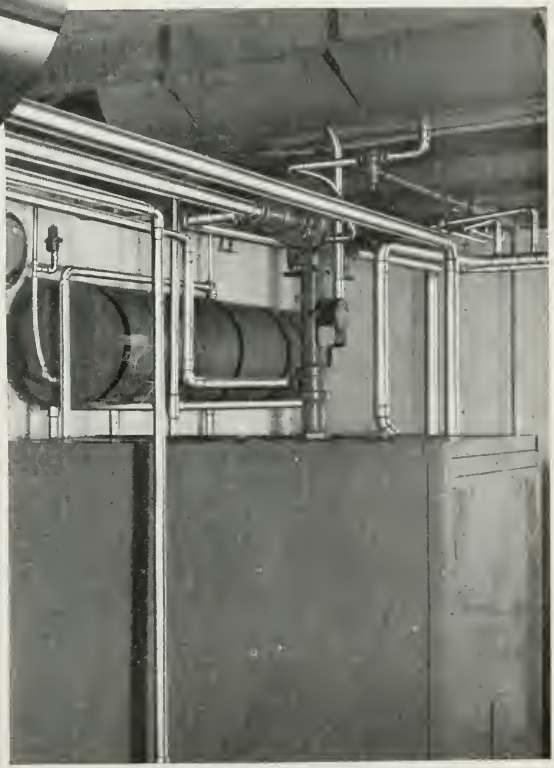
P. HARWOOD.

Four Important Advantages

of Copper Tubes for heating lines

Anaconda Copper Tubes are phosphorus—deoxidized to increase corrosion-resistance and improve physical properties.
Anaconda Fittings have deep cups to give long, strong bonds and more support for tubes.

Anaconda Copper Tubes and Fittings offer far better value than rustable piping for hot water heating systems, particularly of the forced circulation type; also for low-pressure steam installations and for oil burner lines.



1 Copper Tubes reduce resistance to flow. Smooth interior surfaces permit 10% to 15% greater velocity of circulation with the same head.

2 *Smaller size* tubes can be used than are required with rustable pipe.

3 Heat losses are less. Usually, the heat given off by uninsulated copper lines is no more than desirable for heating the basement.

4 *Cost is only a little more than rustable piping!* And Anaconda Copper Tubes and Fittings are *rust-proof*... a "lifetime" investment.

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HOUSE FOR RICHARD TOWNLEY,
SAN MARINO, CALIFORNIA
Harold O. Sexsmith, Architect

MODERN ALL-GAS KITCHEN IN
RICHARD TOWNLEY HOME,
SAN MARINO, CALIFORNIA

AN unusual, rambling floor plan which includes child's play room and breakfast room, has been designed into a typical California home with characteristic long, low lines, by Architect Harold O. Sexsmith for Mr. Richard R. Townley, San Marino, California. Outdoor intimacy is provided by easy access to the garden from the living room and two bedrooms.

To effect economical and flexible heating in a sprawling house of this type is always somewhat of a problem. In this case, a two-section gas warm air furnace is easily controlled to supply instant heat to any part of the house. Kitchen planning includes a modern gas range and Electrolux refrigerator. Costing approximately $7,000 to build, this California residence has attracted wide architectural interest.

Built in 1700

Now re-roofed for years to come with U·S·S Ternes

"OLD Swedes' Church" in Philadelphia was first used for services July 2, 1700. It is now one of the oldest buildings in the country—and is still in good condition.

A few years ago, it became necessary to install a new roof. To preserve this ancient structure, descendants of the "Old Swedes" searched for the best roofing available. They selected U·S·S Ternes. Based on rigid service tests and experience with terne roofing on old colonial homes, the present roof, with proper care, should give this old structure lasting and substantial protection.

Ternes have many other advantages. They are storm-proof, windproof and will stand intense heat. Lightning has never been known to penetrate a properly grounded terne roof.

Ternes are economical, too — lower in first cost than comparable roofs, easier to apply and cheaper to maintain. Being light in weight, they do not require expensive supporting construction. They can be used in any climatic conditions for any type of roof, from flat to vertical.

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UNITED STATES STEEL

Photo by Gabriel Moulin Stu

APARTMENT HOUSE ON TELEGRAPH HILL, SAN FRANCISCO, CALIFORI
FOR J. S. MALLOCH AND J. ROLPH MALLOCH

TELEGRAPH HILL GOES MODERN

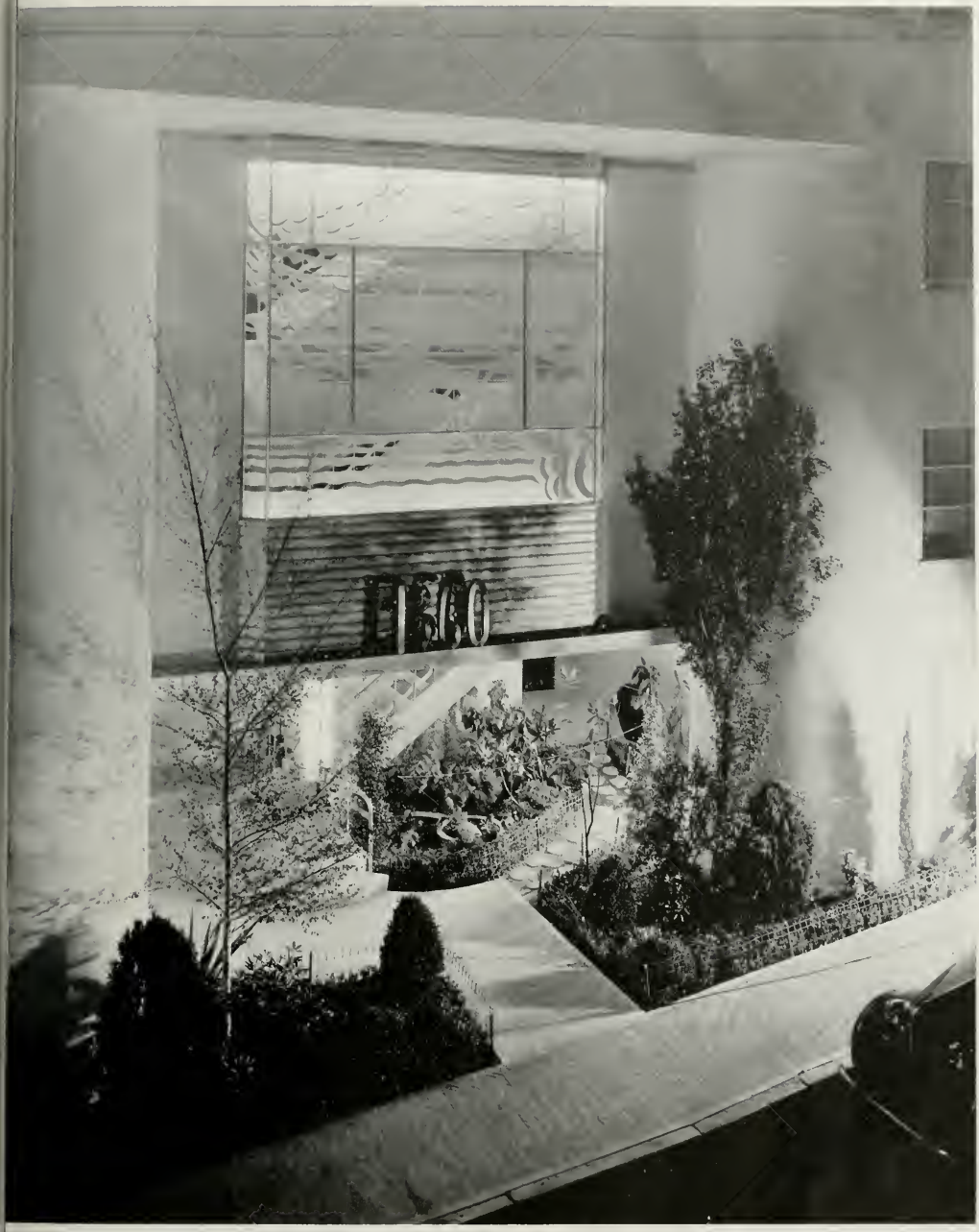
By Fred Jones

THE unique apartment house here illustrated occupies a commanding site near the crest of San Francisco's romantic Telegraph Hill. Each of the nine apartments and two penthouses overlook a panoramic view of San Francisco Bay, with its interesting waterfront, the world renowned Bay Bridge, and the 1939 Exposition site. The fact that each of the units in the building has a living room and private terrace overlooking this colorful land and marine view has much to do with the unusual interest this enterprise has aroused.

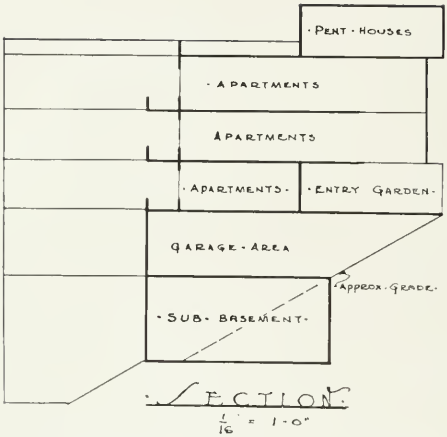
All four floors are individually planned, and while this arrangement may have added materially to the cost of the building, the 100 per cent rental of apartments, even before the

LANDSCAPED APPROACH TO MAIN ENTRANCE OF APARTMENT HOUSE AT 1360 MONTGOMERY STREET, SAN FRANCISCO

REAR ELEVATION OF APARTMENT HOUSE AT 1360 MONTGOMERY STRE
SAN FRANCISCO, SHOWING UNIQUE STEP-BACK ARRANGEMENT
WHICH PROVIDES UNUSUAL OUTDOOR COMFORT



MAIN ENTRANCE OF APARTMENT HOUSE AT 1360 MONTGOMERY STREET, SAN FRANCISCO, SHOWING CLOSE UP OF SANDBLASTED GLASS PANEL, ILLUMINATED AT NIGHT BY CONCEALED LIGHTS



DRAWING SHOWS CLEVER ARRANGEMENT OF FLOORS TO COMPLY WITH BUILDING RESTRICTIONS AND AT THE SAME TIME GIVE FOUR STORIES OF APARTMENTS

building was completed, would appear to have fully justified the added cost. Telegraph Hill offers a certain Bohemian atmosphere that the public has found alluring, and success of this particular venture has been an incentive for other investors to plan similar projects in this locality.

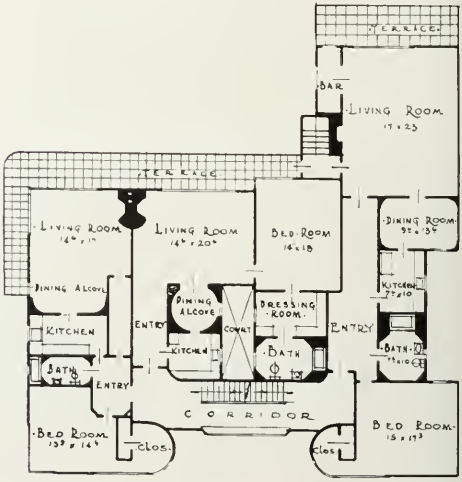
The steepness of the location made it possible to have below the street level not only a concrete garage for fourteen cars but also sub-basements for each tenant. Entrance to the building is through a sunken garden, its tropical plants enhanced by statuary, fountain, indirect lighting and a supporting pillar of glass brick. The architectural treatment is modern. The facade is decorated with an imposing central design in sand-blasted glass flanked by forty foot Scraffitto carvings in two colors, the work of Alfred du Pont who applied the same technique employed two thousand years ago at Pompeii.

Of particular interest to architects and builders is the unusually efficient manner in which the lot area has been utilized. The scale drawing illustrates how it is possible to have four floors of apartments legally in a frame building.

The interior details are simple, effective, and in many cases completely original. Indirect lighting is employed throughout. The bathrooms are finished in solid colors with Neo-angle tubs and showers. Kitchens are all-electric and streamlined, counter-level equipment swinging without breaks around three walls.

Other features include circular dressing rooms, large storage areas in each apartment, closidor racks on the backs of the bathroom doors, Venetian blinds, built-in bookcases, small barrooms in some of the apartments and generous use of glass brick partitions. Mouldings, baseboards and non-essentials generally, have been eliminated. The dining rooms are circular, with open built-in shelving. Color has been used boldly, each apartment with a different color scheme. In some of the living rooms interesting results have been obtained by treating the ceiling and one wall in a primary color, with the other walls in a second color.

Foundations, sub-basement and basement are of reinforced concrete with the remainder of the building wood frame. The entire structure was designed to meet all state and city requirements for lateral stresses. The owners and builders are Messrs. J. S. Malloch and J. Rolph Malloch of San Francisco. W. H. Ellison was the consulting structural engineer.



TYPICAL FLOOR PLAN
1/16 = 1 · 0"

APARTMENT HOUSE AT 1360 MONTGOMERY STREET, SAN FRANCISCO

LIVING ROOM AND CORNER OF DINING ROOM, APARTMENT HOUSE AT 1360 MONTGOMERY STREET, SAN FRANCISCO

NOTE GLASS BRICK WINDOWS BASED WITH FLOWER BOXES, AND COMPLETE ELIMINATION OF MOULDINGS AND BASEBOARDS

— HAVE YOU AN UNCOMPLETED PROJECT?

(AN OPEN LETTER TO THE PROFESSION)

Would you like to have us depart, in some particulars, from the customary way of publishing a monthly magazine?

If you could find somewhere, someplace, a bit of unusual design, to you a masterpiece in conception, yet for some reason an uncompleted project, would it interest you to have it published?

Almost every architect has had the experience of producing a dream in design which would be of unusual interest to his fellow craftsmen.

THE ARCHITECT and ENGINEER proposes to depart from the usual way and invite architects, who care to contribute, to indulge in a bit of fanciful play for an Exhibit of Ideals. No new design is desired nor expected. You are to think back (but not too far back) over your professional career and pick out of your files the thing that interested you most and which you believe will add to the material wealth of good design for illustration. Due credit will be given the author.

The Architect and Engineer will devote one issue, early in 1938, to the publication of a selected number of these designs and may, from time to time, use others as frontispiece material.

Will you therefore deliver your selection in shape for reproduction to the offices of the State Association of California Architects, 1101 Citizens National Bank Building, Los Angeles, or 557 Market Street, San Francisco, for The Architect and Engineer, San Francisco. There your design will be judged, competently, and a prominent disinterested architect to be chosen as Guest Editor, will prepare appropriate comments when the material is published. Perspective and plan are desirable, photographs of originals preferred.

The response to this invitation will expire January 31, 1938.

THE WEDDING OF HOUSE and GARDEN

A Place Planned for California Country Living

By Harris C. Allen, F. A. I. A.

THE plans of Mr. C. B. Johnson's place at Orinda—over the hills from San Francisco, but not far away—tell the story of a healthy family life, with completed and convenient provision for various forms of outdoor activity. Here is easy access to swimming pool, badminton and tennis courts, play grounds with sand pits, and in closest contact with the house is a large brick paved, brick walled court, fit for many functions connected with either house or grounds.

A happy co-ordination between architect and landscape architect has brought about this consummation of ideal facilities. It is not so common to find house and garden so closely and obviously planned with reference to each other; and it seems clear that Mr. Johnson was fortunate in finding such collaborators as Frederick L. Confer and Ned S. Rucker to interpret his ideals.

An interesting feature is the remarkably direct access to the great open paved court (which is the radiating center of most activities) of not only living rooms, but also bedrooms — even those in the second story portion, presumably guest rooms.

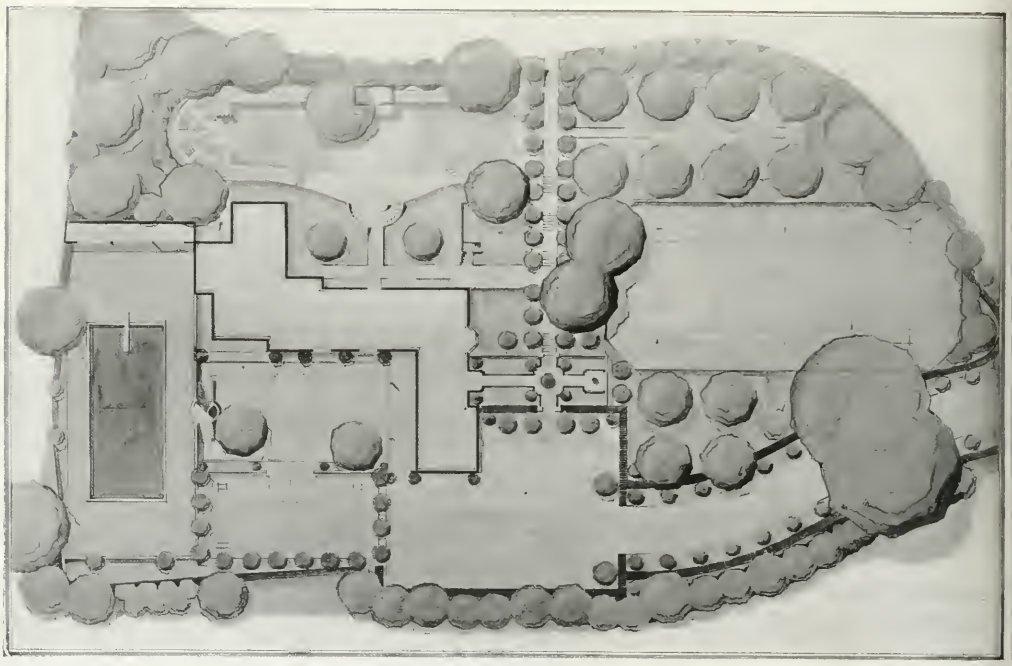
Mr. Confer's architectural setting is admirably restrained, with much of the traditional spirit of the hospitable California country home expressed in a manner sufficiently contemporaneous. The various terrace and roof levels in tone predominantly sturdy brick, but relieved by graceful touches of white-painted wood and iron, are pleasantly framed by the rolling stretches of brown hills embroidered with patterns of green. If we were insuring houses, we should call this one a good long-term risk, little likely to become obsolete within the life of the policy.

HERE THE ARCHITECT HAS MADE POSSIBLE A HAPPY COMBINATION OF INDOOR AND OUTDOOR COMFORT

Country House of
C. B. Johnson,
Orinda, California

Frederick L. Confer,
Architect

VIEW FROM SWIMMING POOL, COUNTRY HOUSE OF C. B. JOHNSON, ORINDA, CALIFORNIA

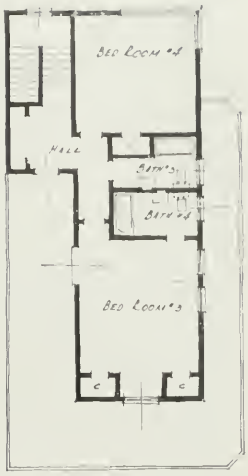


PLOT PLAN, COUNTRY HOUSE OF C. B. JOHNSON, ORINDA, CALIFORNIA
FREDERICK L. CONFER, ARCHITECT

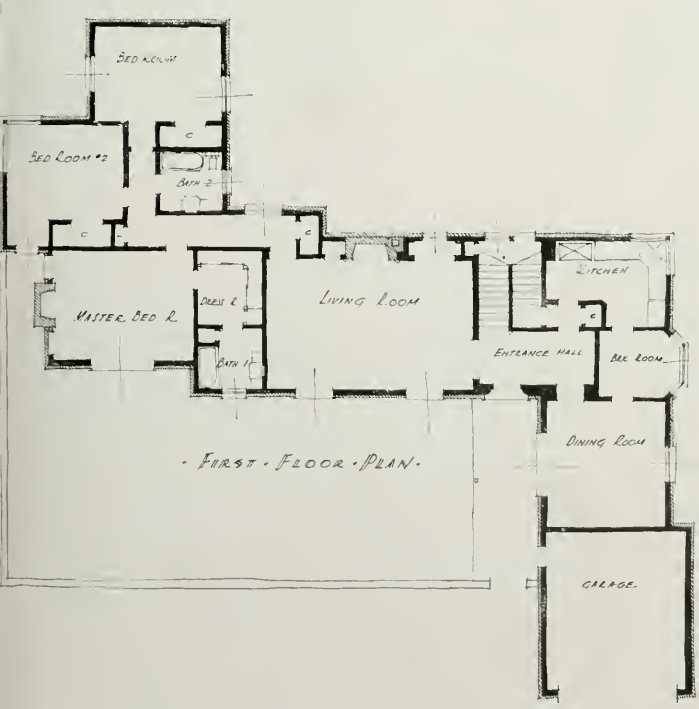
COUNTRY HOUSE OF C. B. JOHNSON, ORINDA, CALIFORNA

Frederick L. Confer, Architect

TWO GUEST ROOMS AND CONNECTING BATHS ON THE SECOND FLOOR, WITH FAMILY SLEEPING AND LIVING QUARTERS ON THE GROUND FLOOR, CLOSELY WEDDED TO THE TERRACED GARDENS BY INNUMERABLE FRENCH DOORS AND WINDOWS



SECOND FLOOR PLAN



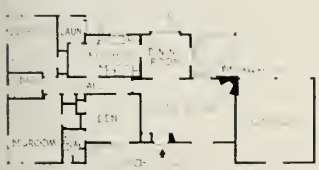
FIRST FLOOR PLAN

A PLAN THAT WILL SURELY MAKE FOR A HEALTHFUL FAMILY LIFE

SWIMMING POOL AND SUN LOUNGE ARE AN INTIMATE PART OF THE JOHNSON HOME IN ORINDA

)USE FOR N. T.
)WELL, FELTON GABLES,
NLO PARK, CALIFORNIA

n Below)
RTZKA & KNOWLES,
CHITECTS



HOUSE FOR N. T.
NOWELL, FELTON GABLES,
MENLO PARK, CALIFORNIA

(Plan Above)
HERTZKA & KNOWLES,
ARCHITECTS

Housing—

OPPORTUNITIES for BUILDING

THE INVESTOR SAYS—

The opportunity for American business to get housing under way quickly is at hand. This opportunity arises from new needs and new wants which have sprung from new conditions of living in America. There are still many families who will want to own their own homes, but the number of families who do not want to buy and who would flock to the kind of planned rental subdivisions is countless. Industry is idle. Money is idle. The machinery for putting them to work, while not perfect, is available. Let's go.

By CHARLES F. LEWIS
Director
the Buhl
Foundation

THE twentieth century has brought to America many new and swiftly changing social and economic forces. Nowhere has their impact been greater than upon the American family. Particularly is this impact reflected in the changing needs and wants of the American families with respect to their shelter.

The whole way of life in America for multitudes has changed in the past two generations. Starting slowly, this change swept onward with ever increasing speed until it engulfed our people before they had become even fully conscious of its development.

Among the factors which have changed the face of our life have been: (a) the shift from a village to an urban existence; (b) the shift from handcrafts to machine production and from a system of simple proprietorship to one of large enterprise; (c) the declining size of the American family; and, related directly to this last factor, (d) a profound and apparently widespread change in the attitude toward the institution of marriage.

These factors and others, having affected powerfully the way of life and the attitude toward life, inescapably are drastically changing the wants and needs of American families with respect to their housing.

The shift from a village to an essentially urban society has brought complexities with which the family alone is no longer able to deal. In the smaller social order the common aspiration of every family was to own its own home. To have a bit of the soil, to have a stake in the land was for the average man a proud badge of his independence. He prided himself on his ability to build it, to own it, to protect it. It was to him, in truth, his castle. He looked with ill-concealed superiority upon his less fortunate or less ambitious neighbor who was merely a tenant and who kept his roof over his head only by a landlord's sufferance. The satisfaction in

[Please turn to Page 33]

PROFITABLE RENTAL PROPERTIES

By STEWART McDONALD
Administrator
Federal
Housing

UNCLE SAM SAYS—

The Federal Housing Administration is prepared to cooperate with private enterprise in developing housing projects of any size up to ten million dollars, and comparable in stability of earnings, for their equity owners, with such enterprises as Chatham Village, Washington Sanitary Improvement Company, and City and Suburban Homes. Federal power to insure mortgages can compensate for the concealed risks and hazards. Through Federal cooperation in the planning, financing, construction and management of the housing corporation, the government can make it reasonably certain that the project will be economically sound.

BEFORE we start into a real discussion of rental housing I want to explain what the Federal Housing Administration does. But first of all let me impress upon you we do not lend any government money. The Federal Housing Administration is simply an insurance operation and has transacted almost two billion dollars worth of business. From its insurance and inspection income of approximately $600,000 a month it is now practically paying all its own expenses. So far only 45 properties have been turned over to the Administration after foreclosure, and of these 20 have been sold with a shrinkage of around $10,000 which is the total of mortgage insurance losses to date, on about a billion dollars worth of home mortgages.

Housing is the topic of the hour. But in discussing it we ought to keep our feet on the ground and face the issue fairly and squarely, particularly on the question of the number of houses needed to supply the ownership demand. There have been all sorts of estimates as to this number. Some say there should be an average of 500.000 homes built annually for the next ten years. Some even say a million should be built each year. I for one am frank to say I do not know what the exact market is.

The British experience is most often quoted as a basis for American estimates and in addition the success of our mass production methods is pointed out as something to pattern after. However it is doubtful that either analogy can be applied in this country for houses to be built for sale. It is quite possible that the market is much thinner than we think.

Editor's Note—The papers presented on this and succeeding pages were read at a recent conference in Washington sponsored by the U. S. Chamber of Commerce

One thing is certain: a man does not buy a home like he buys a ham or a pair of shoes. He buys a ham when he is hungry and a pair of shoes when his feet are wet; there are lots of different elements necessary to be considered in getting him into the proper psychology of buying a home—security of position and happiness of his home life, might be mentioned, as examples. As for the tremendous sale of homes in England in the last ten years certain differences between the two countries should be noted.

One fact stands out—that notwithstanding all the help placed at the disposal of the American owner in his quest for a new home—such as the facilities of the F. H. A., the government's generous supply of capital to the savings and loan associations, with the insurance companies loaded with mortgage money, and all available at the lowest rate ever known in the history of the United States—still during the last two years, there has only been built a matter of 500,000 housing units for individual home owners.

AVERAGE CITIZEN A RENTER

For many reasons, it is apparent that a great mass of our population—the "Average John" citizen — must perforce be renters, either through their own choice or due to conditions beyond their control. As a matter of fact, it is estimated that perhaps one-half of the entire urban population of the country will always remain renters. Most of these families for various reasons are unable to assume the obligations of home ownership; many must be prepared on short notice to follow employment opportunities to some other part of the country; others must face the fact that they have never been able to accumulate a sufficient sum for a down payment to render ownership anything but a gamble with the future.

It is amazing, therefore, when you stop to think of it that this tremendous market in one of our basic industries should stand all but neglected by the business men and investors of this country today, and yet it offers the widest of opportunities and one of the most fertile fields for promoting general recovery in business and industry.

During a little more than two years, we have placed approximately 250,000 families in individual homes. Over half of these are newly constructed homes, and plans are under way which we trust will even better this, so that the individual home ownership program is well on its way. We are, therefore, now in a position to intensify our efforts on rental housing.

Through this we hope to offer those who must rent their homes the best possible substitute for ownership of the individual home, and, at the same time, offer an opportunity for investment in and construction of a type of housing for which there is a great need and demand in the country today.

The general characteristics of the rental housing market up to now might be compared to a pyramid, with high rental properties for the upper ten per cent of the population at the top. Below, comprising the bulk of the market, are all the rest of the renters, and the lower you go into the pyramid, the wider the base.

It is a well established fact that up to only a few years ago almost all the residential construction done in the towns and cities of this country, has been for the upper ten per cent—those who wanted to keep up with the Joneses. Generally speaking, what little improvement there has ever been in housing standards for the bulk of the population, has come about when those in the higher brackets moved out and the others moved in.

NEW FIELD FOR PRIVATE CAPITAL

We have never directly set about building dwellings for rental to the great mass of the population. Apparently there has been a lack of desire on the part of private capital to make permanent investment in this class of construction. Capital has been attracted to apartments built for the well-fixed by reasons of the high rents paid in prosperous times or possibilities of quick sales with large profits; but the thought of making permanent long-term investment in apartment houses built for people of moderate or low incomes, and with a serious intention of

staying with it, has not been given consideration to any considerable extent. Here is the market that the Federal Housing Administration intends to develop.

If this rental market had been near the top of the pyramid instead of well down in its body, the possibilities of renting vacated quarters to families of formerly higher incomes would have been practically nil.

So—to summarize. At the top of the pyramid, there is a thin and uncertain demand, which in times of great prosperity offers glittering profits, but collapses in times of depression. Unfortunately, this type of property has caused many of the frozen loans in the large lending institutions, often leaving them in no position to encourage building either for rent, or sale, to the great mass of the population.

As a result, those of us who are studying the problem are forced to admit that the market has not been properly exploited and that it has not been ruled by the simple law of supply and demand in the steady and orderly manner required by normal business activities, but rather by the erratic building characteristic of abnormally prosperous times.

The FHA goes no further than the insurance of mortgage funds advanced by private capital, so we can do nothing for people at the bottom of the rental housing pyramid. But, as you know, Mr. Straus of the U. S. Housing Authority, has explained how those people must look for relief through the Wagner-Steagall Act designed for relief of slum dwellers

Likewise, we are not interested in the top of the pyramid, for these wealthier families there can take care of themselves.

But we ARE very definitely interested in the larger group of economically self-reliant people, who can and will pay for dwellings offering healthy, sanitary and comfortable living quarters without frills or extravagances but within their means.

We are interested also in placing mortgage financing and the construction industry in such a stable position that they may continually supply the housing demand for these people and avoid the violent fluctuations that have heretofore endangered every cycle of residential construction in America. In doing so, we shall hope that industry itself will grasp every opportunity to go deeper into this field.

Let me tell you something of how our rental program operates. Section 207 of the National Housing Act authorizes the insurance of mortgages on large-scale housing projects up to $10,000,000 each. These projects must be so regulated as to conserve the property, rate of return and methods of operation, at least while our insurance is in force.

The title of the Act states as its fundamental purpose "to encourage improvement in housing standards and conditions," while in the body of the law it is required in each particular case "that the project with respect to which the mortgage is executed be economically sound."

Within this legal framework our program offers a medium through which industry may serve the renting population.

GOVERNMENT INSURES MORTGAGES

By a recent change in our regulations, however, we are also prepared to accept for insurance mortgages on large projects consisting of many single-family houses which may be sold off individually as purchasers appear. This is in addition to homes constructed under the single insured mortgage plan, whether separately or by operative builders, and must not be confused with it. Generally it is contemplated that projects of the kind under discussion will be built originally for rental, in the expectation of later sales; but we can also now very well consider projects under our large-scale rental program, where the original intention is to sell the houses at once, renting only those which are not immediately disposed of.

In addition and through further amendments to our Act, which have already been placed on the calendar of Congress, we hope soon to be prepared to insure mortgages on any type of project for any number of families, either of row house or apartment house types, or for any combinations of apartments and houses design-

ed for rental purposes. These apartment houses may be two or three-story walk up buildings, and if circumstances warrant, the first floor partially used for business. You see we are aiming at a higher degree of flexibility of type of construction eligible.

Thus far, most of the mortgages we have insured have been on properties held by private limited dividend corporations, but municipal corporations could also develop rental projects eligible for FHA insurance.

What I have in mind is nothing more than a suggestion for consideration and exploration, for every large city has its problem in blighted areas. Chicago is an outstanding example. Even Washington is no exception. In all cities are found neighborhoods which have almost been abandoned. In their present state they are useless for homes and cannot produce any appreciable income as business properties. Yet they have all the facilities for proper housing—water, sewerage, light, police and fire protection. In addition they are close in and ideally located for homes of low-salaried office workers, mechanics, watchmen, clerks, and the like. Here might be the answer to location for rental housing. The municipal advantages would be great, if these areas could be redeveloped by private capital to furnish suitable and proper housing; though the first step in any such scheme would be to induce the cities to throw new safeguards around these deserted districts, so that they might be protected as residential areas.

Thus far under our Large-scale Rental Housing Program we have actually insured mortgages on 20 projects, located in 10 states.

Although in dollars of mortgages insured, our results to date are small in comparison with the $1,000,000,000 of individual home mortgages under the mutual mortgage insurance plan. It must be apparent that to educate, stimulate and plan these large-scale housing projects takes a great deal of time, and it was not to be expected that this rental program would meet with the spontaneous response of the program for building individual homes for sale. Nevertheless, the 20 projects represent a capital outlay of approximately $18,000,000 and have demonstrated their practicability to such an extent that new applications in increasing numbers are now being received, giving us the belief that the program will become widely understood and appreciated.

Even so, we do not pretend to have done any more on these large-scale projects than to make a start, for we have been hampered from the outset by a lack of understanding of what we were doing, not only on the part of the great lending institutions and those required to invest in the equity, but incidentally in convincing promoters that, even though the insurance is furnished by the F.H.A., a governmental agency, the proposition does not come off a Christmas tree, but demands proper location, substantial construction, sound financing and good business all the way down the line.

MUST OVERCOME TRADITION

Perhaps our greatest handicap has been a tradition of 300 years of speculative attitude towards all real estate. However, the golden age of this speculation is past. In most cities, for instance, there are large areas which have reached the limit of profitable prices. So, in the narrowing of speculative possibilities, a wider opportunity comes for rental housing.

The provision of homes for rent through capital yielding a long-term, steady and comfortable return, has long been accomplished in many other countries and from our more limited experience, I believe it can be done here.

For the equity investor in such a project there is the promise of a high degree of stability of return, combined with steady appreciation in the value of the investment—for as the mortgage on a project is gradually paid off, the owners' equity increases. Upon complete payment of the mortgage, the property is owned outright and free from all restrictions. It becomes evident, therefore, that investment in the stock of such a housing corporation, if the property be well designed and well built in the first place, may very well be looked upon as an annuity which accumulates over a number of

years, even though during those same years a substantial return is received on the original investment.

The opportunities offered by this kind of set-up should be of the greatest interest to land owners, whether municipalities, individuals or institutions; to land developers; to estates consisting partly of land; to architects; to builders; to real estate operators and to the investing public generally.

Investors in the mortgages may very well include lending institutions of all classes. Not only the great life insurance companies and other custodians of large aggregations of savings, but the local banks as well, should find it worth their while to investigate the possibilities of investment in the mortgages we will insure on large-scale rental housing projects.

If the transaction is larger than one institution is able to handle as a single mortgage loan, it may very well be financed by a private bond issue with several institutions participating. Complete details for such transactions have been worked out and several projects have already been financed in this manner. So far these large loans have been covered by a single mortgage usually to a large life insurance company.

The final element of security for the mortgage is the FHA insurance. Most of you know how this operates. But, as a matter of fact, while we are quite prepared to pay if a project should go into default, we do not in reality expect to have any appreciable losses. We believe that the physical and financial structure involved in the sort of housing corporation described will provide both safety for the mortgage lender and an adequate and stable return for the equity owners.

Let me repeat—there are four large rental projects in the Washington area in various stages of development, all financed by private capital—as a matter of fact, by three of our leading life insurance companies—and inspired by the liberal provisions for guarantee in the National Housing Act.

OPPORTUNITIES FOR BUILDING

[Concluded from Page 28]

having "elbow room" on acres of one's own, together with the glory of filling one's lungs with the sweet air of freedom, made life worth while.

Almost over night this simple early American family found the village grown up about its house, the village grown into a town, and the town grown into a great city. Bit by bit its land was cut away until finally all that remained of one's proud acreage was a narrow city lot with strangers' houses built up close on each side with noisy commercial and industrial uses just around the corner, and traffic thundering past the door.

This new existence the family has found precarious. It has been no longer able to police and protect its home. It has delegated police protection, and even the drawing of water to the city government; and the lighting of its lamps and the cooking of its meals to private enterprise. Against invasions of all sorts in its neighborhoods the family is defenseless. It leans more and more on its city government for protection against intolerable social invasions and against destructive industrial incursions.

Under the new order, for great numbers of our people, all of the once vaunted glories of home ownership have passed, the old shibboleths have lost their meaning, and only the hollow fiction remains.

The shift from a system of handicraft to machine production and of small proprietorship to large enterprise has likewise powerfully affected the family and its attitude toward its house. Under the old order, as under the new, bad times came and went away, but even in bad times for the cobbler there was some work at his bench. But, under the new order, when the factory shuts down there is no work at all. The perils of cyclical employment are greater than ever. To them have been added the perils of technological employment. Both have made for economic instability and insecurity.

Associated with these factors has been the mobility of industry itself arising from its great

restlessness as it has sought to adjust itself to the pressures of swiftly changing circumstances. This mobility has added to the workers' problem an instability of residence. In the simple handicraft, rural days a family with confidence could plant itself on the soil for life. Today, large numbers of our people, particularly among the whitecollar workers, must as a matter of economic necessity keep themselves free to follow the beck and call of opportunity or of transfer to a distant city.

AMERICAN FAMILY GROWING SMALLER

It is hardly strange that under the impact of these new forces the American family should be declining in size. It requires for its use, therefore, not so much space either in land or buildings. Convenience and economy more and more have been satisfied by providing that space which is required vertically instead of horizontally. Until recently it has been feared that this process of change might mean that eventually the family would lose contact with the soil altogether. Convenience and economy, mobility and independence, have seemed to be served for these families by renting rather than by owning their homes.

Of no minor significance is a fourth factor also growing out of those that have been previously mentioned. A changing attitude toward marriage on the part of large numbers of people is reflected in a decreased confidence in the stability of the marriage relationship. This changing attitude affects the action the family may take with respect to its house. If there is lessened confidence in the stability of the institution there necessarily is lessened confidence in the permanency of family residence.

All of these factors are developing a more realistic attitude on the part of multitudes of families toward their housing requirements. It is no longer sufficient to attempt to refute these forces by singing of the "Old Oaken Bucket." The feeling of insecurity brings many families to realize that independence is to be had not by attaching oneself to a city lot but by avoiding long-term commitments which can be terminated only by great difficulty, by great loss, or by both. By sheer force of social and economic necessity American families are forced to substitute practicality for sentimentality in seeking to satisfy their housing needs.

I do not wish to be understood as believing or implying that there is no longer a place for individual home ownership. It has its place. I have every sympathy with the aspirations of families who want to own their own homes and with every effort of industry and finance to assist them on an honorable basis. But, I submit that it is time for all of us to recognize that changing conditions of life are making ever increasing numbers of American families want to rent their homes rather than to buy them. As business men, too, we should recognize that there has been in the past no adequate recognition of this fact and little effort to satisfy this tremendous potential market. One reason that in the past so many American families have bought homes, often jerry-built homes from speculators, has been because there was no decent alternative. Home rental has not been attractive. For the most part landlordism has been absentee or amateur. We have lacked in America in any large sense both landlordism based upon constructive investment motives, and property management of a professional nature. Both landlords and property managers have regarded, and too generally still regard, their rented properties as mines to exploit rather than as farms to maintain and improve. Moreover, the homes available for rent even more than the homes available for purchase have been exposed to those social and economic invasions which zoning so far has failed effectively to control or prevent.

In brief, the present situation offers to the American construction industry, the savings institutions, and to management the opportunity to build a new kind of blight-proof residential community to be managed on a long-term investment basis, a kind of community in which American families can find a way of living suited to their new needs and their new wants.

The fundamental reason for the hit-or-miss, topsy-turvy development of most American

cities is that they have been built small-scale. Capital in the large sense has been busy with building up great enterprises of industry and transportation. In the years of rapid growth and expansion it has neglected the housing field and left it largely to the speculator and the jerry-builder. Today, the same opportunities for great expansions of industry and transportation no longer exist. On the other hand, a great new market based upon profoundly changing human needs has opened in the field of residential construction. Capital is frankly challenged by this unusual opportunity for sound and productive use of its funds.

Essentially this will be an investment and not a speculative use of capital. But the investment returns to be had now and over a long period of years will compare more than favorably with the experience of industry generally. The results will far surpass those that owners and lending institutions have had with residential real estate under the old and passing systems.

LONG TERM INVESTMENT YIELD

Let us look briefly at the two elements of the proposal: first, that a large part of the new residential building should be in the development of large-scale planned communities built in one operation from the ground up and managed on a long-term rental basis; and, second, that the object of capital employed in this enterprise should be not quick speculative profit, but sound and secure long-term investment yield.

The practicality of both of these principles has already been convincingly demonstrated in practice. At Chatham Village in Pittsburgh and elsewhere evidence is to be found, evidence that the large-scale planned community, socially integrated and controlled, held in a single ownership over a period of years and motivated by sound purposes, will be secure from many of the perils of invasion that beset the ordinary district of single family homes owned by many separate owners. Physical maintenance of all the properties, under large-scale operation, can be permanently guaranteed. The social quality of the community can be guaranteed. The district can be protected from invasions of undesirable use, regardless of the adequacy or the inadequacy of city zoning systems. In short, the districts, if large enough and if wisely administered, can be maintained against neighborhood depreciation regardless of what may happen in other parts of the city. Such districts cannot become obsolete. Such districts will not cease to be taxpaying civic assets.

No less has it been demonstrated by the so-called limited dividend companies from Boston in 1871 to Pittsburgh in 1934, that limited dividends pay. I refer you specifically to the remarkable success of the City and Suburban Homes Company of New York, founded in 1896 by Mr. R. Fulton Cutting and associates. After thirty-seven years of operation, in 1933 in the midst of the depression, this company could boast of assets of nearly $10,000,000, a surplus of more than $1,380,000, an annual income of $1,225,000, and net earnings of from $263,000 to $445,000 per year through four depression years. The average annual dividend rate from 1899 to 1936 was 4.65%. Or let us take six non-cooperative apartment projects built in New York City under the New York State Housing Board. All have been consistent dividend payers in good times and in bad. Or let us take, in this City of Washington, the Washington Sanitary Improvement Company, which with assets of nearly $1,200,000 can boast that from 1897 to 1923 it paid an annual dividend of five per cent, and from then on straight through the depression of six per cent. Or the Washington Sanitary Housing Company which has paid five per cent per annum without interruption since 1927. While Chatham Village in Pittsburgh has not yet published earnings statements, those statements when released will give further evidence of the investment soundness of the large-scale housing enterprise on the limited dividend basis.

The only grief of limited dividend companies, insofar as I have been able to learn, has come from operations too small-scale or from speculative procedures apparently inescapable in installment selling. Where these companies have

treated their properties as investments and have continued to operate them on a long-term rental basis, they have been uniformly successful.

The worst handicap of the limited dividend company is its name. Experience abundantly indicates that it might more properly be called an assured dividend company. It serves to point the moral, however, that the business man who goes into the housing field to make a quick speculative profit is very liable to lose his shirt, while if he recognizes the social and economic security of large-scale enterprises, well conceived and well managed, and seeks an investment return, he may confidently be assured of one of which he will not be ashamed.

The planning, the ownership, and the management of these enterprises invite organization ultimately upon a national scale, and the spread of holdings in many cities will confirm the security and the stability of the investment. Such companies will attract and hold the finest site-planning, architectural, and engineering advice in the country.

The building of such large-scale housing enterprises as have been here discussed not merely offers new areas for capital investment, but also opens up inviting fields for completely integrated, nationally operating, home building companies, capable of applying to large-scale construction sound organization procedures and management policies. Such companies are almost certain to be a development of the comparatively early future. In time they will come to control quarries, brickyards, forests, lumber mills, and a wide range of material and equipment factories.

NEW INDUSTRY WAITING FOR CAPITAL

Here, then, is a new industry waiting to be created, an industry capable of producing billions of dollars in construction annually, able to stabilize year-round employment for a large part of the building trades, and competent to make a major contribution to economic and social security in the building of cities for the new day, cities composed of residential districts built and kept blight-proof by the application of principles tested and proved in other industries and other investment fields.

Most of the essentials for far reaching activity in the building of large-scale planned communities on investment basis are at hand. The market is here, a market probably greater and more eager than any one of us has yet realized. Capital in vast volume is waiting to be put to work. Not in years has five or six per cent with security seemed to be such a generous yield as it does today.

The chief need today is to implant an understanding of the new opportunity and of the new idea more widely in the minds of all those who control the availability of mortgage credit. A beginning has already been made in this respect. Progress is constant and I make bold to venture the prediction that one of these days, and before long, a great many men and institutions will get the idea at the same time. When that happens, as it is certain to happen, there will be a competition to finance large-scale housing enterprises on the part of those who have money to lend.

In the meantime, a start has been made upon setting up the frame work for financing this new type of housing. The most useful agency and most effective in promoting it has been the Federal Housing Administration. Its insurance of mortgages on such projects takes out virtually every element of risk for those who put up the principal funds. Certain things need yet to be done. The chief help would be a simplified machinery for issuing bonds on the mortgages placed on these large-scale operations, in order that the loans might be more liquid and also in order that the public generally might participate in a high grade real estate investment. It would also be helpful if the act promoting the establishment of national mortgage associations would be modified in order to permit them to operate profitably. A few legal changes would act powerfully to release funds without in any way weakening the protective features of the law.

ENGINEERING BUYS MODERN LIGHTING

By R. S. Dearborn and

A. W. Ray*

THE Building Manager has become impatient with those who would sell him "better light." He listens to the inconsistencies of manufacturers' claims, and is confused because every representative of the Science of Seeing and the Lighting Fixture Industry seems to tell a different story.... Lighting **should** be so simple!

In defense of the lighting man, however, it should be recalled that a very few years ago his business was 90% art, and only 10% science. More recently, advanced research and widespread surveys have added a measure of reason to former cut-and-try methods. This advance has revealed many hidden factors and has made the subject vastly more complex. It is really too much to expect any one man to know the whole story.

For example, most salesmen recommend 20 footcandles for general office lighting. But tests show that the average person cannot distinguish the difference between 15 footcandles and 20 footcandles. And scientific investigation has proven that there is no appreciable difference in visibility afforded by those two values. Neither are 30 footcandles much better than 20 footcandles. Only by doubling illumination is substantial improvement gained.

More confusion arises from apparent conflicts between objective facts and subjective opinions. In other words a lighting job is not always what it appears to be. Space does not allow for technical analysis, but the following facts are important:

1. In general, the brighter or more luminous a room **appears.** the lower is the visibility.

2. Visibility is reduced greatly as brightness of surfaces and light sources are increased above certain values (which values usually are exceeded).

3. Most of the light which falls on the eye from any area but the papers and the desk, is detrimental to seeing.

4. Therefore, that lighting system which is least obvious usually provides the best visibility. Even this type of system can be very harmful to vision if the level of illumination is below the safe minimum.

5. Color environment and certain psychological effects of the entire office have as much to do with seeing as does the amount of light provided.

6. Direction of light is as important as amount of light.

The obvious conclusion is that there are several important factors to consider when planning a lighting system. Beware of the fellow who stresses any one factor to the exclusion of the rest!

That all the above factors are worthy of careful consideration should be recognized by the purchaser. However, every business must pay in order to exist and every expenditure must result in profit to be justified. The business man requires to know what these things mean to him in **Dollars and Cents.**

Dollars and cents is a matter of **efficiency.**

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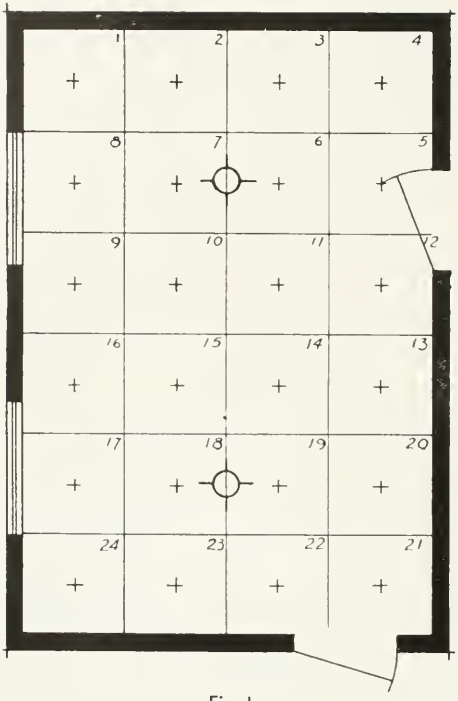


Fig. 1

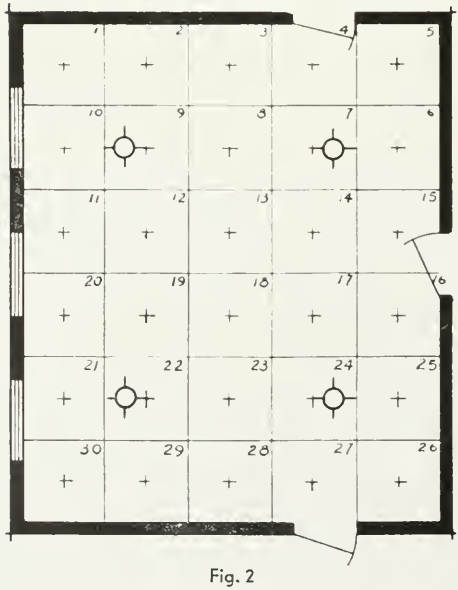


Fig. 2

Efficiency is highly important no matter which luminaire is selected and no matter what type of decoration is employed. If a given job can be done more economically, certainly the owner will get more for his money. If the result is more footcandles, the effort is worth while. Or, by careful study, it is sometimes possible to supply a given illumination with less wattage by using a more efficient system.

Regardless of the type of illumination required and the purpose for which it is used, efficiency is important. Even with a lamp in the engine room or in the stock room, **waste can be prevented** and human energy conserved by using proper light-directing equipment.

Having considered wall and ceiling colors, floor covering and furniture in designing an office for good seeing conditions, comfort and efficiency, we next select the lighting fixture. Usually, several manufacturers are invited to demonstrate their equipemnt. The various fixtures are "tested" and **five times out of ten** the building buys the poorest one of the lot. Why? Because the tests made had no true value and because the analysis was based on pure unadulterated guesswork.

Never need there be any guesswork in the selection of lighting equipment. Any practical-minded purchaser may use sound engineering principles in appraising indirect luminaires. Simple, non-technical testing specifications are available.

Looking at a Standard Large Mazda Lamp Schedule it is found that the light output of each lamp is given in "lumens," and the efficiency in "lumens per watt." The "lumen" is the unit for quantity of light just as the "quart" is the unit for quantity of milk. If all the light from a 500 watt lamp (10,000 lumens) were distributed uniformly over the area of 100 square feet there would be 100 footcandles at every point on that area. The footcandle has been defined as the number of lumens per square foot. Therefore, the efficiency of a lighting system is calculated to footcandles per watt. And in the last analysis. the unit cost of light is not cents per kilowatt hour, but cents per average foot-

candle. This is because a given wattage by various methods may be made to deliver different quantities of light. These quantities vary with depreciation and voltage fluctuation.

Photometric data giving candle power distribution and efficiency of the luminaire itself are often misleading. It is for the experienced engineer to interpret such data. Actual performance tests conducted on your own premises will provide the information of practical importance.

1. Fixtures should be tested in the room in which they will be used or, when that is not feasible, in a place where similar conditions of ceiling and wall finish and room proportions obtain.

2. If the room is small it is desirable to test with all fixtures in place just as the completed job will be (Figs. 1 and 2).

3. If the room is large then an architectural unit should be tested with fixtures in place (Fig. 3).

4. Provision should be made to test voltage at the outlet. The voltmeter should be checked frequently during tests and any variation in voltage noted with the footcandle reading taken at the time of the voltage fluctuation. After all readings have been recorded, correction (sufficiently accurate for this type of test) can be made to constant standard voltage, adjusting the footcandle reading 3½% for every 1% voltage variation.

5. Next the room should be divided (on paper) into equal areas, two to five feet square. In the center of each square (on the floor of the room) a mark is then made, using adhesive, chalk or anything that will not move until the test is complete. The areas need not be square. They may be rectangular, provided the width is not less than two-thirds the length, and provided all areas in the room are the same size (Figs. 1, 2, 3).

6. A stick or portable support is then prepared which is carried to each station and which will place the sensitive cell of the light meter at desk height for reading "footcandles on the working plane."

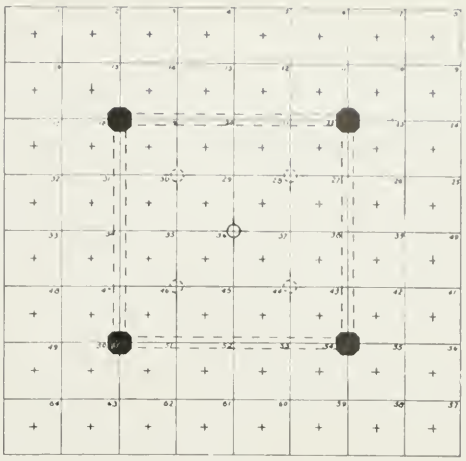


Fig. 3

Fig. 4—A Test in Progress

Luminaire Tested
Lamp used: 500W, 120V, PS40, 1F Mazda

Square No.	Line Voltage	% + or - lamp Voltage	% + or - Ft-C Reading	Ft-C Reading	Ft-C Corrected
1	118	-1.7	- 5.8	21.0	22
2	118	-1.7	-5.8	24.5	26
3	117	-2.5	-8.7	26.5	29
4	118	-1.7	-5.8	24.5	25
5	116	-3.3	-11.5	27.0	30
6	116	-3.3	-11.5	30.5	34
7	117	-2.5	-8.7	29.5	32
8	117	-2.5	-8.7	27.5	30
9	117	-2.5	-8.7	29.5	32
10	116	-3.3	-11.5	31.5	35
11	116	-3.3	-11.5	33.0	37
12	114	-5.0	-17.5	28.0	33
13	116	-3.3	-11.5	28.5	32
14	117	-2.5	-8.7	33.0	36
15	117	-2.5	-8.7	31.0	34
16	118	-1.7	-5.8	31.0	33
17	117	-2.5	-8.7	27.5	30
18	117	-2.5	-8.7	29.5	32
19	116	-3.3	-11.5	29.5	33
20	119	-0.83	-2.9	29.0	30
21	119	-0.83	-2.9	22.5	23
22	117	-2.5	-8.7	25.5	28
23	117	-2.5	-8.7	26.0	25
24	117	-2.5	-8.7	18.5	20
				Ft-C Sum	721

(Ft-C Sum) 721 x (Sq.Area) 9 = (Total Lumens) 6429

(Total Lumens) 6429 ÷ (Total Area) 213 = (Ft-C Average) 30

(Ft-C Average) 30 x (Maintenance Factor) 0.70 = (Min. Ave. Ft-C) 21

7. During the test all external light must be excluded.

8. Fig. 4 shows such a test in progress. It is not much trouble. Forty-five minutes, including preparation, was all that was required to make the test pictured.

9. A sample set of recordings showing corrections for voltage variations and comparison between two different fixtures is given on the opposite page.

Comparisons of different fixtures can be made readily and accurately by using the "total lumens" figure obtained above. This was done by adding the corrected footcandle readings and multiplying that total by the square foot area of one of the identical squares, giving a product which is the total number of lumens delivered on the working plane. That product contains the information required. It shows the net result, or the useful light delivered. which may then be compared to the amount of light originating in the lamp.

If one fixture delivers 4500 lumens and another, using the same lamp, delivers 3500 lumens (a common difference) the first is 28.6% more efficient for that particular application than the second. By using the first, one would obtain 28.6% more light for his money.

Assuming the 500 watt lamp will burn for its rated 1000 hours, 500 kilowatt-hours will be consumed during each lamp life which, at 2 cents per KWH, will cost $10.00. While the use of either fixture will cost $10.00 per 1000 hours, in one case it will cost $0.22 per lumen and in the other it will cost $0.285 per lumen, or 28.6% more. Carried out on a year's basis these figures have surprising significance.

Frequently, accurate tests reveal that the use of a more efficient fixture will permit the use of smaller lamp sizes and still provide the illumination required. In such a case the difference in cost of operation not only represents a saving, but higher quality equipment can be purchased and the investment amortized in a comparatively short time.

Also to be figured into the above is **maintenance** of efficiency. Some types of fixtures will depreciate less than others. Some are more accessible for janitorial servicing than others. Some do not require as frequent janitorial service. These facts must be ascertained before the decision is made.

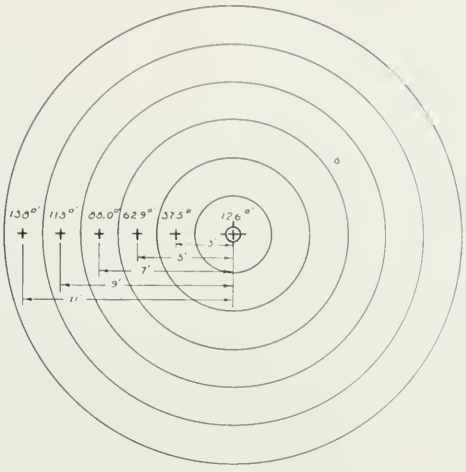
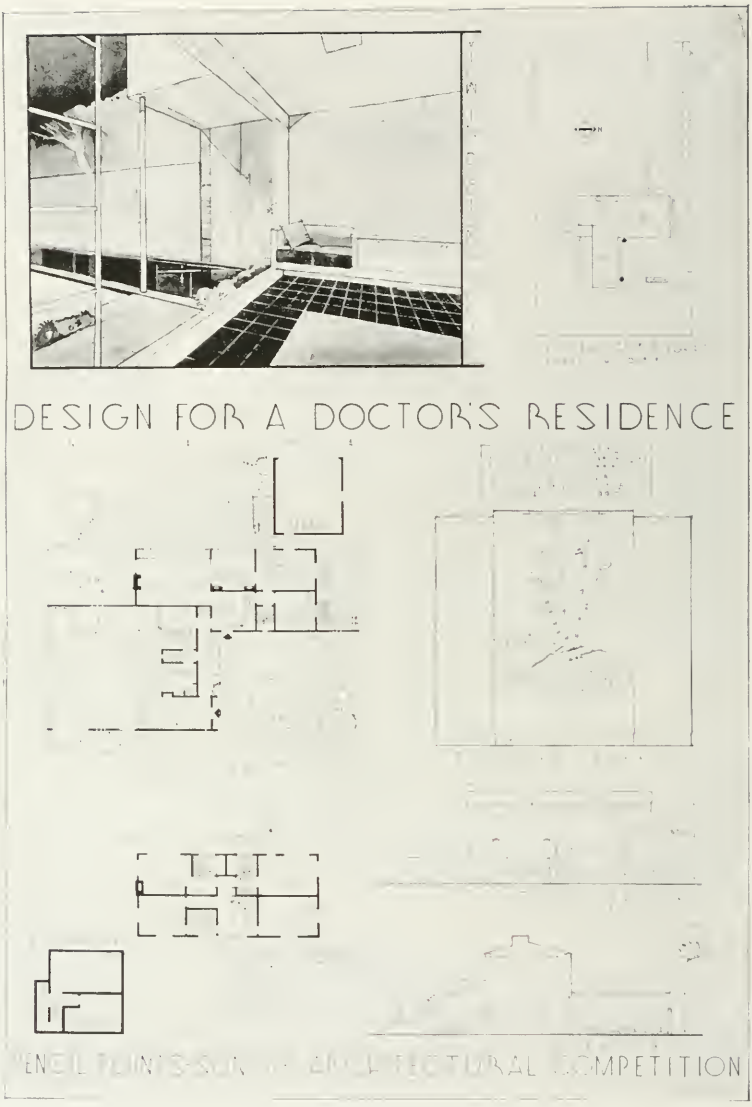


Fig. 5

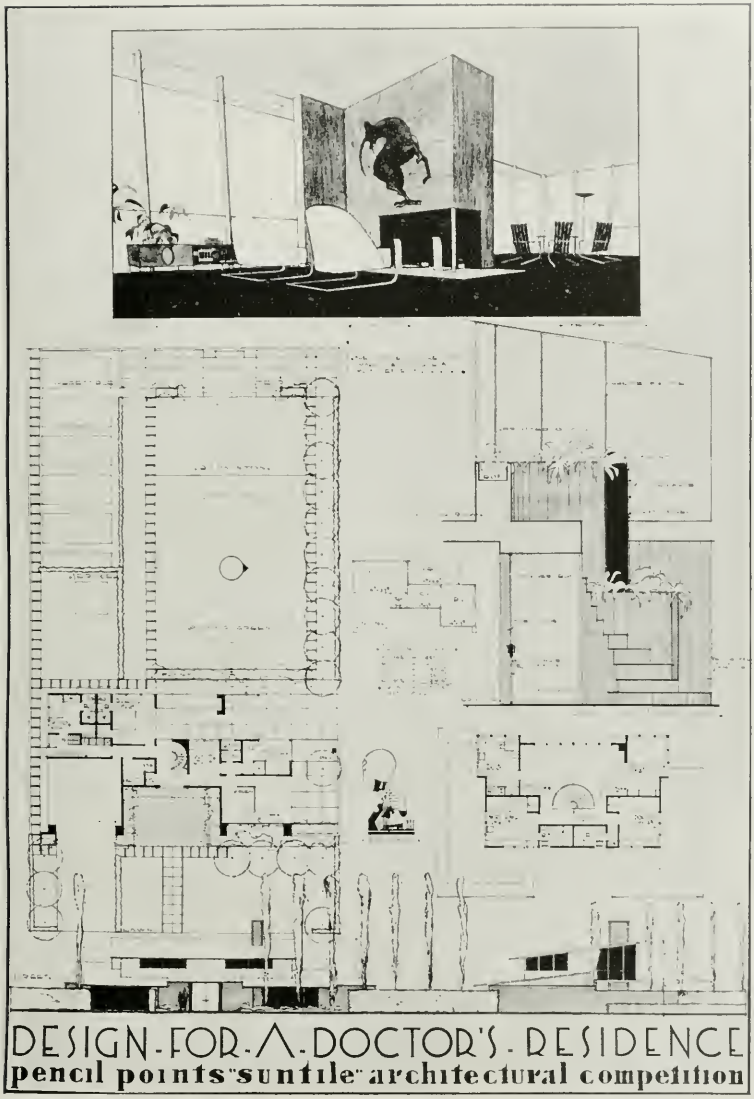
Having completed the tests and computations involved, look again at the fixtures themselves before deciding whether to select a luminaire on appearance alone.

Another test-method deserving attention is the concentric circle or concentric area method. (Fig. 5). Due to the influence of walls and other variable factors this method is restricted for use in large rooms or in small rooms having very dark walls. The two methods will check exactly where the walls have no reflecting power but will differ greatly as the wall factor is increased. In slightly different form this method can be used with more accuracy, but the complexity often leads to error. For these reasons, it is considered advisable to employ the unit-area method.

Any representative of a manufacturer of high quality luminaires will be delighted to submit them for such a test as the one above described.



WINNER OF THIRD PRIZE:
R. J. MAYER AND K. ADACHI, LOS ANGELES



WINNER OF FOURTH PRIZE:
BEN H. SOUTHLAND, LOS ANGELES

FOUNTAIN IN A PRIVATE ESTATE

WHY BUILD NOW?

By Bernard L. Johnson

THE construction industry, taken as a whole, is of great interest and importance to all; but the home building division comes closest to the general public. There is real heart-throb in homes; and every individual, sooner or later, faces the question of shelter, housing, home ownership, home building.

To rent or to buy; to remodel, to modernize, or to build now; and, if to build, **when** to build —these are real problems facing the people today, urgent and serious investment and security problems; nothing academic or theoretical about them.

Why should a man build now?

Let's separate that into its two parts: (a) Why build (or buy) rather than to continue as a renter? and, (b) Why go ahead now?

The answer to this two part-question is very simple and for each individual rests squarely on the basis of personal advantage or profit.

Back several years ago, before the present building recovery had gotten under way, there were attempts to harness other motives to move the home building train, but none was effective. We found that few cared to build because it was patriotic or because, as we pointed out, the building industry was the greatest potential employer of labor and normally the nation's greatest stimulator of other lines of business. These were good arguments and some of us kept mighty busy traveling around writing and preaching them. But until the good old economic basis of personal gain and benefit came back into the picture, there was no general movement toward buying and building.

And so the answer to the question today of why build now? is that very elemental one of personal and family finance: It's better and cheaper now to own than to pay rent; and, looking ahead just a little, it is clear that this advantage is going to become still greater as rents continue to advance. Money can be made and saved by building now.

"American Builder" has made numerous surveys of cities and towns to gauge vacancies, rents and new building volume. **Everywhere** there is a shortage of homes today. New families, wanting to move in, can find no suitable accommodations. Often they have to go away out into the country or double up with friends until new houses can be put up. Rents are up and are going higher. Building costs have moved upward, not very far as yet but enough to forecast reliably the boom prices ahead.

Wenzlick's Forecast

A speaker we should have had on this program today is Roy Wenzlick of St. Louis, well known analyst and charter of real estate and home building factors, and author of that widely read book, "The Coming Boom in Real Estate." I had the pleasure recently of hearing him demonstrate his big chart and support with authenticated figures his advice to the American public **to buy real estate now and to build now.** He has made a close study of the advances and declines in real estate and building since 1795. The peaks and valleys in the construction cycle during this 142-year period were illustrated with a large map, 20 feet long. It also showed the fluctuations in the general business cycle which are totally unlike the fluctuations in the real estate cycle.

Mr. Wenzlick's chart showed that for 142 years booms and depressions in building and real estate have succeeded each other with

Paper read at conference on local residential construction, Chamber of Commerce of the United States, Washington, D. C., November 17-18.

remarkable regularity. There is an average interval of 18.3 years between the peak of one boom and the peak of the next. In the entire history of the United States there has never been an interval of longer than 20 years between the peaks of two booms or the valleys of two depressions. Building booms have always occurred along with periods of real estate activity.

On the basis of this chart, Mr. Wenzlick places us at present just a little below the normal line on the upswing from the recent depression. He predicts that another boom in real estate and building is developing and that this boom will reach its peak in 1942 or 1943. It is because his studies have convinced him that a boom in real estate is inevitable that he is urging people to build today instead of postponing construction to the boom period when costs will be high and labor scarce.

It is always a wise investment to buy anything that is undervalued. Real estate is undervalued today and for this reason it is a good buy. New homes cost less today than they will again in 18 years, according to the Wenzlick periodic chart.

What of Today's Costs?

Now, what is the situation today concerning home building costs? In terms of dollars the price, averaged, of all building materials increased during the past year from 88 per cent of the 1926 level up to 98 per cent of the 1926 level, an advance of 11 per cent. The total advance from the bargain low of the depression year 1932 has amounted to 36 per cent. However, if we price these building materials in terms of our principal farm commodities, which is the true way of appraising costs, we find that building materials today actually cost less than they did back in 1932!

A bushel of wheat then bought 9 board feet of No. 1 yellow pine lumber; now it buys 20 feet. In 1932 it bought 60 pounds of Portland cement; now it buys 164 pounds. Likewise, a bushel of corn in 1932 was exchangeable for 16 brick; today it rates 32 brick. A farmer who wanted to build a new barn sent a steer to market back in 1932, and each hundred pounds was worth 90 square feet of composition shingles; today this beef buys 340 square feet of shingles—almost four times as much.

Similar favorable comparisons are found today on pork, butter, cotton and all agricultural commodities which fix real price levels and determine the prosperity not alone of farmers but of practically our entire population. So the price of building materials is not high today, and the home seeker should not permit himself to be dissuaded or confused by current material price gossip.

Over-All Cost is Important

As a matter of fact, when all the costs of acquiring and improving a home property are considered, the prices of the building materials —whether they be "high" or "low"—prove to be relatively unimportant.

Very often the new home prospect looks into only the construction part of the proposed project; and even that he does not do thoroughly or with competent professional guidance. He makes some layman's inquiries as to lumber prices and local wage rates; and if these strike him as "too high," he gives up the idea of building.

Now as a matter of fact the cost of materials installed on the job by skilled workmen under experienced management has very little relation to the price quoted the general public on some of the raw materials of construction. Furthermore, when all the costs are considered, it is found that some items that loom large in the public eye are really of minor importance in the total.

Those desiring to build should bear in mind that it's not the price of lumber, brick, putty or nails that should concern the average buyer; it is the over-all cost of the complete house and lot, including the financing. And the corollary to this is that the price of nails and putty, of cement and lumber, is not as important in determining the final cost to the home owner as the skill, ingenuity and professional ability of

the builder, and his fellow building industry men.

Builders are continually putting more equipment and better equipment, new devices, new aids to comfort and livability, improved construction practices, and materials into their homes. They are doing this today and have been doing it over the past decade without a comparable increase in the price of the finished house.

A factor that has done much to confuse the public thinking on building costs and prices is the incompleteness of most of the current indices of building costs. These are usually heavily weighted with a few basic commodities. Of course these commodities are important, but an index which is based on these alone fails to show such important factors as the price of home equipment, such as oil burners, refrigerators and electrical devices, all of them mass production items on which prices have been reduced one-half or more in the past few years. Such a material index also fails to show the relative operating efficiency of the builder. And this item alone outweighs all others.

When any particular unit of building cost gets out of line, experienced builders find ways to correct it. They may adopt a different method of construction involving a different product. Or they may rearrange their plan to require less of that material. Or they may develop an improved installation or assembly method that will compensate for the increased cost.

Building industry men can turn the tide of price-thinking with reference to home building, buying and owning costs by challenging all misleading propaganda and by informing the public of the whole story.

Big Saving in Financing Costs

Certain items of building materials may be up and hourly wage rates for building mechanics may be up, but the fact remains that due to better design and more efficiency on the job the total product, the completed home, is delivered at a lower cost today than back in 1928-29 and is a much better habitation. Furthermore, because of improved home financing under the single long-term mortgage instead of the old expensive short-term first and second mortgage system, the new home is bought today for enough less to much more than make up for any increase in construction costs. Bear in mind that a reduction of one per cent in interest rate on an 18-year monthly-amortized mortgage is equivalent to an 18½ per cent saving in the first cost of the building; then consider the present low interest rates and you and your customers and clients will get a truer picture of the present opportunities for home building and buying at a real saving in final cost.

If you will draw a pair of bar-charts for the years 1929 and 1937, dividing the "building dollar" into its four main parts; namely, financing, site purchase, sales cost and profit, and construction expense, you will clearly see that, whereas formerly more than half of the money went into the first three, today these preliminary and overhead costs are so reduced that a much larger portion of the available funds—probably two-thirds—can now go into actual construction. This means a larger, better equipped home for the same money or the same home for a less amount.

10 Helps To Lower Costs

There are numerous trends and factors present today to help the home builder hold down costs, and these are all affirmative answers to the question, Why build now? Ten of these favorable facts, briefly summarized, are:

1. Lower financing costs are now available under a single long-term mortgage in place of the old short-term first, second and land contract system.

2. Building sites are now priced for use, not for speculation.

3. Construction costs are cut through increased use of factory-produced units of material and equipment.

4. Labor costs are cut through increased operating efficiency due to modern tools and power equipment.

5. Lower costs result from use of simplified house designs, planned for stock sizes of materials and parts, and elimination of useless ornament.

6. Economies are enjoyed arising from present vogue for smaller, more compact houses with multiple use of space for sleeping, dining and "living."

7. Savings in fuel costs are experienced from the use of insulation and the employment of other present high standards of construction.

8. Savings in upkeep and maintenance costs result today from better design and use of proper long life materials.

9. Lower sales costs are figured on houses built for sale by operative builders, and a smaller profit margin is being asked by contractors.

10. A way to lower costs has been discovered through the "out to the suburbs" and "into the country" movement.

The home builder of today gets the advantage of all these ten favorable factors.

Building Industry Competent

And then a final reason for building now is that the home seeking public can be well assured that it will receive competent service from today's building industry. Home planning, specifying, purchasing, building are highly involved, technical matters on which professional, experienced service is always needed—and is worth its cost. Such service reduces expense. Designed for modern living, today's home is more than the sum total of the raw materials used in its construction.

As with today's automobile, the public buying transportation and not steel and rubber, so with today's homes; the public is and should be concerned with the complete unit for livability, comfort, security and style and not with the board foot price of lumber or the cost of a sack of Portland cement. And, as the motor car producers turn out a better implement of transportation today for less, in spite of the advancing price of raw steel, so too, the efficient building industry of today is delivering a better home for less money than a decade ago.

Advancing rents and the mounting shortage of homes and apartments now definitely mark the end of the "free rent" period; home building and home ownership at present costs will certainly prove the wisest course, resulting in satisfaction, security and profit to the owner. Those are my answers to the question—Why build now?

ALIBYING THE PROFESSION

By Wirt C. Rowland in Bulletin of Michigan Society of Architects

FROM time to time and not just since or during the depression, there seem to have been ineffective struggles by the architectural profession to maintain its standing in a society fast going in many opposite directions—to maintain its dignity and prestige beside that of the older and more solidly intrenched professions of law and medicine—leastwise not to be abandoned to the tragedy of a dependent and slavelike condition or to be drawn into other lines of business where complete personal identity is lost.

Because these struggles have been prolonged over a period of many years convinces me that there must be some—many—underlying reasons for the lack of standing of an architect in America which is not caused by mere external conditions, politics, economics or what have you. The latter form alibis, which means—without going into the essence of the matter—we have been **fighting alibis!**

Such external conditions as the industrialization of every known effort, such things as state or politically controlled professional activity,

waves of low economic temperature—still find buildings to plan and build and even under these restrictions, there is a rational place for the architect—it is for this ostensibly that he is trained. Under the same order of things, in state controlled medicine, the doctor is still the medium of administering to the sick, and there is no usual course in law which is not through the medium of a lawyer. These parallels with the profession of architecture have been so often and helplessly drawn that it almost appears that there is no such true parallel and that it has been erected by the architect himself in his plaintive helplessness.

Out of the foregoing restricted conditions, we have had several professions which have risen and have retired behind the citadel of organized security. Among these are the advertisers. The reason for such mention is that business apparently sees advantage in what for certain evanescent qualities has the same relation to business as that which the architect may provide in the way of appearance or that which might by its appearance attract the gaze of the public.

Yet in business the advertising profession is so firmly entrenched and the financial emoluments are so substantial as to place it along side of medicine and law as a necessity.

Has architecture grown to be a necessity in America? No—except in Washington! It is talked about—among architects. It is taught in many universities and yearly, students are matriculated and sent out into a cold world where they suddenly find that what they have learned is not especially desired unless it be accompanied by some business advantage, therefore they turn to the "business" of architecture (very loosely related to the original thing). Now, after the manner of business, a demand must be created like as in advertising. And this savors of salesmanship—and we get further away from architecture itself.

One reason above all others which prevents the architect from presenting a formidable professional front is his congenital lack of ability to organize. In spite of his societies he is inherently an individualist. He is only superficially clubby. Inwardly he is a visionary because he lacks contact with the mallet and chisel which was discipline to the imagination of the medieval craftsman. And the image which he carries in his mind of what architecture should be is comparatively unrelated to what he must use to accomplish his building.

Without a strength of conviction of what architecture should be, his efforts are very unconvincing and his presence in society unimpressive. He may not lack the ability to talk, but people instinctively read back of the talk and finally assign him his proper position in society as that of relatively passing importance.

Impressive struggles for snappy service, putting the right gadget in the right place, keeping the cost down—all—and your patrons will forget—or—turn and rend you, if, in the end, their neighbors have brought to their attention an obvious architectural imperfection!

After all, the individuals, who have not stood in their profession for what they are convinced is a basic need—what they feel within themselves is that thing as separate and distinct from all other things in building for which they are trained and by nature can give—are not entitled as combined in a profession to impress society. Nor is there any other **real** foundation on which to build a profession for that which in the beginning gave the architect his name—but a love and knowledge of it.

TODAY'S ARCHITECTURE AND THE RICH

Architecture has ceased to be an instrument of the rich, Charles D. Maginnis of Boston, president of the American Institute of Architects, declared in a message to the Institute's members, organized in sixty-nine Chapters throughout the country. Mr. Maginnis called upon architects to give professional direction to the national housing movement, and to bring good architecture to the less favored population groups. The "bureaucratic idea," he warned, threatens to limit the usefulness of the architectural profession in its efforts to improve human habitation.

"A changing world is presenting novel and critical problems which demand the immediate study of the architectural profession,' Mr. Maginnis said. "In our modern society, architecture has had only a limited beneficence. The statement is familiar that only a tenth of our building is architecturally literate, with the consequence that our typical community may claim some proud oasis of beauty, but is preponderantly ugly and incoherent so as to invite question whether the measure of our culture is the one condition or the other. That the profession is, to this degree, ineffectual has always been deplored, but it has been too easily accepted as a condition beyond hope of intrinsic remedy.

"Must the architect be satisfied to be considered an instrument of the rich? We know that in the past, and under political systems less admirable than ours, architecture was not estranged from the humbler life of society. Obvious economic difficulties have accounted in the past for the detachment of the profession from this neglected enterprise. But considerations of social justice are now moving us to a more conscious feeling for the less favored of society.

"Under the initiative of government a promising beginning has been made in a great program of small housing under responsible architectural control. Other agencies are co-operating which are notably less sensitive to the need of professional direction. It is of vital importance to our profession, and at the same time an obligation of enlightened patriotism, that our relation to this great developing interest be securely and permanently established. The Institute's Committee on Housing will study the means by which the profession, under the guidance of the Institute, may adjust itself effectively to service in this new and extensive field.

"As we seek to extend the boundaries of our profession in this directioin, however, we are warned of a conflicting movement which threatens seriously to limit it. This is the extenison of the bureaucratic idea. So far we have confronted this issue only in our relation to the Federal Government. We must now prepare ourselves to meet the aggravating problem in our very midst.

"Legislation has been twice attempted in New York State, and actually accomplished in Connecticut, which embodies the principle that architecture can serve the public interest adequately through the incorporation of architects and draughtsmen in the general organization of public works. The implications of this menace are so unmistakable and so clearly to be combated only by local action that a large responsibility must be perceived to rest on all the Chapters of the Institute.

Nor is this situation to be effectively met by temporary political expedients. It is to be hoped that the validity of our position can be supported by realistic and convincing testimony of our superior claim upon the community. The lines of such opposition are so well indicated in the admirable enterprise of the Institute's Committee on Public Works in relation to Federal projects that all Chapters of the Institute are urged to seek its counsel and acquaint themselves with the results of its study and experience.

"It would be highly agreeable to the conservative spirit of the profession if its social value needed no aid of propaganda. But in these articulate days so many interests of no less conservative habit are clamoring for the public consciousness that, if we are even to hold our present place, we have need to make the world more aware of us.

"Taking it for granted that, in spite of assault, architecture still retains its ancient validities, we are occupied only with the vital and realistic business of the place which it is to have in the new order, an interest which should engage the earnest thought of every architect of America.

"In the shifting conditions there is visible the opportunity to enlist the science of the architect to a new and more vital social purpose. Architects cannot hope that the significance of this opportunity will be more directly indicated to us by our American public. It must be clearly detected by ourselves, and the future position of our profession will largely depend upon the intelligence and address with which we meet it."

TWENTY-FIVE YEARS OF PROGRESS

Twenty-five years of continuous foundry operation in the West is the fine record attributed to Columbia Steel Company, subsidiary of the United States Steel Corporation. The Columbia plant is at Pittsburg, California. It is one of the largest and best equipped in the United States. To accentuate, the company has recently published a brochure containing pictures of the foundry and interesting descriptive matter, with special reference to steel castings. A brief outline of Columbia s growth is also given. Copies of the booklet are available to anyone sending in a written request to the San Francisco office in the Russ Building.

NEW ARCHITECTURAL FIRM

Formation of the new firm of Baker, Stewart and Palmaw for the general practice of architecture in Seattle is announced by Frank L. Baker, George Stewart and Ivan M. Palmaw.

With the Architects

WILLIAM E. COFFMAN, ARCHITECT

William E. Coffman, 45, well-known architect of Sacramento, was killed in an automobile accident three miles from Michigan Bar near Jackson, December 2nd. Mr. Coffman was accompanied by A. R. Robertson, who was driving the car and who also suffered death when the machine ran into a soft dirt shoulder and turned over. Mr. Coffman had practiced architecture in Sacramento for more than twenty years and among the buildings designed by him was the new Stanford Junior High School in Oak Park, the Pierce Union High School, Arbuckle, the Fort Bragg High School and the remodeled Forum Building, Sacramento. He was a member of the State Association of California Architects, the Elks' Club and the Masons.

NEW BERKELEY SCHOOL

A contract was awarded during the month to Villadsen Brothers of Oakland, for the construction of a one and two story reinforced concrete school building to be known as the Whittier Elementary School, at Milvia and Virginia Streets, Berkeley. The plans were prepared by Dragon & Schmidts, B. Reede Hardman and Gwynn Officer, with W. Adrian, the structural engineer.

NILES GRAMMAR SCHOOL

Preliminary drawings are in progress in the office of John J. Donovan, 950 Parker Street, Berkeley, for a one-story reinforced concrete, frame and stucco, tile roof and maple floor grammar school building at Niles. There will be five classrooms, principal's office and auditorium. The estimated cost is $90,000.

MILK DISTRIBUTING PLANT

The office of Harry A. Thomsen, 315 Montgomery Street, San Francisco, is preparing working drawings for a $200,000 milk distributing plant at 13th and Howard Streets, San Francisco, for the Marin Dairymen's Association. Barrett & Hilp, 918 Harrison Street, San Francisco, have the contract.

ORINDA RESIDENCE

Miller & Warnecke, Financial Center Building, Oakland, have completed working drawings for a ten-room house at Orinda for an unnamed client. Bids have been taken and are under advisement. The estimated cost is $18,000.

XMAS JINKS FOR ARCHITECTS

The Producers' Council of San Francisco will entertain the Architects of the Bay District at a Christmas Jinks the evening of December 17th. All architects are cordially invited.

SUTTER HOTEL TO BE REMODELED

Extensive improvements are planned to the Hotel Sutter, San Francisco, from plans by Architect Conrad T. Kett, 519 California Street, San Francisco, and L. H. Nishkian, structural engineer. The work will include a new entrance on Sutter Street, interior modernization and a garage in the basement.

STATE HOSPITAL BUILDINGS

State Architect George B. McDougall is preparing preliminary drawings for three new units at the Napa State Hospital, consisting of dormitories, special wards, and dining room. The State has appropriated $1,137,000 for the work.

RICHMOND SCHOOL

Working drawings have been completed by Architects Dragon & Schmidts, 2068 Allston Way, Berkeley, for the first unit of a $300,000 building program for a Junior and Senior High School building at El Cerrito for the Richmond Board of Education. The initial unit of classrooms is expected to cost $125,000.

TO REMODEL BANK BUILDING

The Anglo California National Bank, 1 Sansome Street, San Francisco, is to undergo some extensive remodeling, including new elevators and heating system, from plans by Architect W. W. Wurster, Newhall Building, San Francisco.

PORTERVILLE SCHOOL

Architect W. D. Coates, of Fresno, has completed plans for a new school building for the Porterville Elementary School District and a construction contract has been awarded for approximately $36,000.

DINUBA HIGH SCHOOL

A $230,000 high school building of reinforced concrete will be erected at Dinuba, Tulare County, from plans by Architect E. J. Kump, Rowell Building, Fresno.

SACRAMENTO NIGHT CLUB

Remodeling is under way to the interior of a night club at 1020 Tenth Street, Sacramento, from plans by Architect Harry J. Devine, Cronan Building, Sacramento.

ARCHITECT MOVES

Architect George Adams has moved his office from 5514 Wilshire Boulevard, Los Angeles, to his new studio at 2430 Cascadia Drive, Glendale.

VISALIA HOTEL ALTERATIONS

Modernization of the Hotel Johnson at Visalia will cost $50,000, according to Ernest J. Kump, Fresno, the architect.

INFLATION and CONSTRUCTION

"WHAT effect will inflation have on the construction industry?" This was the question discussed by Dr. John Parke Young at a meeting of the Construction Industries of the Los Angeles Chamber of Commerce. Dr. Young is Chairman of the Department of Economics at Occidental College and is a nationally recognized authority on the subject of economics.

"This question of money," said Dr. Young "is the most important thing that we have to consider when you stop to think that practically everything we do today is related to money. Barter is not used in general business transactions. We do not barter commodities but we buy and sell them and exchange money for them. Everything is centered around and expressed in terms of money. The monetary system is the heart and soul of the nation."

Dr. Young went on to discuss various types of exchange used in the past for the carrying on of business—cows, skins, tobacco, knives, beads and wives.

Continuing, he stated that values measured in money are not reliable, and illustrated his point by a comparison to a yardstick which is constantly 36 inches in length. The yardstick for money may be 35 inches in length today and 37 inches tomorrow. But people do not think of the value of money as fluctuating; a thousand dollars today means a thousand dollars tomorrow. This is the source of a lot of trouble, but the fact should be understood that, practically speaking, at no two times does the same amount of money buy the same amount of goods. In 1915 a certain amount of commodities could be bought for $100; in 1920 it would take $260 to buy the same amount, in 1921, $140; in 1932, $90, and in 1937, $130.

One cannot expect prices to fluctuate evenly; prices for some commodities rise faster than others, prices for other commodities drop more rapidly. For instance, in the period from 1929 through 1932, there was a decline in prices. This presented a serious problem to businesses where costs were fixed; most of their costs remained fixed but selling prices dropped. Thus there were many insolvencies.

"As to inflation, this term is often used loosely. There are various ways of understanding inflation, but I think the simplest way to explain it is to use the work expansion. Inflation is the expansion of our purchasing media more rapidly than the growth of business. Deflation is the reverse. If inflation is rapid, it brings a rapid rise in prices."

Dr. Young pointed out that in this country there has been a lot of inflation from time to time. The Revolutionary War was financed with inflated currency, known as "Continental" money. The Civil War was fought on printed Greenbacks, $3 of which were equal to one gold dollar. During the World War all countries printed paper money, with the resultant skyrocketing of prices. The type of inflation experienced by Germany and France during this period will probably never occur in the United States. We are not printing paper money so rashly, and our inflation will be of a slower trend and more of credit than currency.

In the rise of prices, one cannot expect them to rise evenly or equally with incomes. In 1925 and again in 1928 we reached the peak of construction prices; but we can expect that construction prices will feel inflation along with other prices.

Dr. Young stated that we are in a slight depression at present which started after the first of the year, and was induced by the banks selling government bonds. The end is not in sight, but it is not something that need cause worry. A chart was used to show the rise of prices in England because of inflation due to the armament program.

Dr. Young reiterated his point that gold does not have much effect on commodity prices and that credit and bank deposits have the more important effect.

Comparing this country with other nations, Dr. Young discussed business cycles. Since 1796 this country has had 33 cycles, the average length being four years. In these cycles there has been 1 1/2 years of prosperity for every year of depression. In England the average length of the cycle is six years with 1 1/10 years of prosperity per year of depression. Canada has the best record of all with two years of prosperity for each year of depression. Backward nations such as China and Brazil have one-half year of prosperity for each year of depression.

Inflation has a happy effect on people, deflation has the opposite effect. During inflation commodities rise more rapidly than do fixed costs, and this makes for a temporary feeling of prosperity. The Administration wants to get prices up to a certain level and keep them there, and while this is difficult to do, a managed economy is the solution to the control of inflation and also of deflation. There are managed economies all over the world, with some countries faring better than others. Many features contribute to a depression, but if economics can be managed and managed wisely, prices can be controlled and the drastic depressions and excessive prosperities can be avoided.

The Federal Reserve Board in conjunction with the Treasury Department is doing a great deal to control the situation, and if the present set-up can be continued much will be done in the way of managing economics. Dr. Young pointed out, however, that politics may interfere.

ARCHITECTS' BULLETIN

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THE STATE ASSOCIATION OF CALIFORNIA ARCHITECTS

Northern Section

STATE ASSOCIATION MEMBER
OF THE
MERICAN INSTITUTE OF ARCHITECTS

Editor

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CONVENTION RESOLUTIONS

ACTION was taken at the 1937 Convention which should promote permanent and satisfactory relations between architects and draftsmen. Article I, Section E, of the Association By-Laws was amended to read as follows:

Resolution No. 5

WHEREAS: It is considered advisable that certain affiliations be made between the State Association of California Architects and Architectural Draftsmen. THEREFORE BE IT RESOLVED: That this State Association of California Architects in its Tenth Annual Convention assembled at Santa Barbara on the 15th and 16th of October, 1937, amend Article I, Section E of the By-Laws as follows:

Affiliation with the Association shall be by organization (hereinafter referred to as the California Society of Architectural Draftsmen and branches thereof) in which all the members are employed as architectural Draftsmen.

The California Society of Architectural Draftsmen so affiliated shall be entitled as an organization, but not as individuals, to all of the rights and privileges enjoyed by active members of the Association, except that of holding office or committee appointments; and in the matter of voting the Society shall vote by a member (or members) (or by proxy) of the California Society of Architectural Draftsmen who shall be accredited as delegate (or delegates) to the Annual Convention of the Association, also the Society may send representation to other meetings of the Association and the State or Section Executive Boards.

The basis for election, privileges and number of such delegates or representatives shall be determined by the Executive Board of the Association and ratified by the Executive Board of the Society.

The Constitution and By-Laws of the California Society of Architectural Draftsmen shall be submitted to and approved by the Executive Board of the Association and must provide for establishing sectional jurisdictions within which sectional jurisdictions branches may be established; also that every Architectural Draftsman shall be eligible for membership in the Society.

This relationship will pave the way for adjusting any problems or differences that may arise, to the best common interests of all. Draftsmen are, of course, potential architects; many of them already hold certificates and others will secure them, from time to time. Moreover, while the old custom of "apprenticeship" has nominally been discarded long since, it is still true that experience in an architect's office is unquestionably educational and is an asset to the draftsman whether he becomes a practicing architect himself or not. Official affiliation through architects' associations and draftsmens' society is a frank recognition of these close relations and common interests.

CONFERENCE BOARDS

A resolution concerning Building Industry Conference Boards explains itself:

Resolution No. 6

WHEREAS: A conference body is now existing in Northern California, known as the Building Conference Board, consisting of representatives of the American

Institute of Architects, State Association of California Architects, Structural Engineers' Society, Civil Engineers' Society, Producers' Council Clubs, Associated General Contractors' Association, and the Real Estate Board, and

WHEREAS: This group is performing an important function for the industry, inasmuch as they act as a medium for discussing problems that are common to the groups which they represent; and, also, they make recommendations that may be jointly followed by these groups. THEREFORE BE IT RESOLVED: That this State Association of California Architects in its Tenth Annual Convention assembled at Santa Barbara on the 15th and 16th of October, 1937, endeavor to interest local groups or existing groups or form a similar body in Southern California.

LEGISLATION

A policy for future legislative work was defined in a resolution pertaining to S. B. 744, and in a general resolution:

Resolution No. 7

WHEREAS: The California State Legislature, at its last session, appropriated $20,000,000 more or less, for the construction of state projects. and

WHEREAS: Senate Bill No. 744 was enacted as a law, and approved by the Governor, May 11, 1937, instructing the Department of Finance of the State of California that all drawings and contract documents for state buildings, with certain exceptions, must be prepared by the Department of Engineering of the State of California.

WHEREAS: The State Division of Architecture, Department of Public Works, has during the past years constantly grown in its scope and activity and is preparing plans and specifications for many public buildings, which work should legitimately fall to architects in private practice.

THEREFORE BE IT RESOLVED: That the State Association of California Architects extend its efforts to repeal any law or laws that prohibit the governmental authorities of the State of California from commissioning licensed architects and engineers in private practice to prepare drawings and contract documents for California State projects, financed by the Department of Finance of the State of California, and

BE IT FURTHER RESOLVED: That the State Association of California Architects sponsor such legislation at the next session of the Legislature as will endeavor to make the State Division of Architecture a supervisory division only except in the case of alterations and additions costing less than $10,000.

Resolution No. 8

WHEREAS: There is a growing tendency on the part of our State government, irrespective of political affiliations, to multiply bureaus, commissions, boards and similar bodies, and

WHEREAS: Such bodies once created rarely terminate their own existence or keep their powers under control, but on the contrary, invariably expand and arrogate unto themselves functions and activities far beyond the purpose for which they were created, and

WHEREAS: Such unwarranted activities invariably lead to the government engaging in competition with private enterprise, a competition in which the individual is unfairly handicapped at the start and which bars him from a field which is legitimately his, and

WHEREAS: This menace has grown especially threatening of late in the field of design of State buildings with a distinct desire on the part of the State Architect's office to absorb also the public school work for which even now, owing to the many onerous rules and regulations imposed by the bureau charged with the enforcement of the Field bill, the architect is hardly more than a rubber stamp, and

WHEREAS: The inevitable result of the above-mentioned activities and encroachments is to lower the standards of architecture by discouraging private initiative and to increase the cost of architectural services; now, therefore

BE IT RESOLVED: By this Convention that we deplore the State activities set forth as being not only detrimental to the welfare of our profession but counter to the best interests of the citizens of California, who, in common with their fellows of other states, wonder if there is ever to be a limit to the already huge army of State employees maintained at the expense of the taxpayer, and further

That we call on all architects of the State of California to stand united for what are plainly our rights and pledge ourselves to use every legitimate means in our power to seek legislation that will not only call a halt on these pernicious activities but restrict the lawful ones solely to the fields for which they were intended.

Presented by the San Diego Division of the State Association of California Architects,

JOHN S. SIEBERT, Chairman,
SAM, W. HAMILL,
WM. P. LODGE,
Committee.

That the present tendency toward government bureaucracy is assuming dangerous proportions is sufficiently indicated by the passage of this Act, even though the clause which affects the architectural profession was more or less concealed under the general subject of state finances. Baldly, it does more than put the government in competition with its own private citizens; it puts them out of competition. It is another step on the road to government in business for itself, which obviously means taking business away from the very taxpayers who support government. This is "Priming the Pump" with a vengeance—but it is reverse action; the water goes down into the well instead of out into the bucket.

REPORT SERVICES

Two similar resolutions were passed, in regard to the northern and southern building news services, of which the relevant one is as follows:

Resolution No. 9

WHEREAS: The agreement entered into between the State Association of California Architects, Northern Section, and "The Architect & Engineer" having proven to be a very satisfactory one, by which the Association has become in many respects a working partner with this publication, therefore

BE IT RESOLVED: That an even wider co-operation and a fuller endorsement of the publication and its services, including Architects Reports, should be undertaken by the Association, realizing that "The Architect and Engineer" is the binding link between the Architectural profession and the building industry in this Pacific Coast territory, reflecting the best advances of both, and,

BE IT FURTHER RESOLVED: That the aim of the Association during this coming year, with reference to this publication, be to assist in promoting the legitimate interest of this publication, which is contributing materially to the advancement of the Association and its membership, and

BE IT FURTHER RESOLVED: That the State Association will co-operate with "The Architect and Engineer" to the fullest extent possible compatible with ethical procedure to discourage and discountenance any other service, which may seek to invade the Pacific Coast territory, realizing that such invasion would result in a destructive competition liable to injure the interests of the Association.

This action of the Convention naturally carries with it the obligation to individual as well as collective effort, in supporting the local organizations with which the Association has made mutually beneficial contracts.

BUILDING CODE

Following an encouraging report from the Association Code Committee, this co-operating resolution was passed:

Resolution No. 11

WHEREAS: The California State Chamber of Commerce has sponsored and promulgated a California edition of the Uniform Building Code for presentation and adoption by California political sub-divisions, and

WHEREAS: Organizations of the building industry, including the State Association of California Architects, have actually co-operated in drafting the code, and

WHEREAS: The code is now completed and ready for presentation and adoption;

THEREFORE BE IT RESOLVED: That the State Association of California Architects in its Tenth Annual Convention assembled at Santa Barbara on the 15th and 16th of October, 1937, reaffirm its confidence in the sponsors and authors of the code, and recommends a serious consideration of the proposed code by the Executive Board for early endorsement of the document.

Printed proof of the completed code will accordingly be submitted to the Executive Board in the early future.

THE MARIN CAMPAIGN

In regard to the discriminatory ordinances existing in Marin County, the following resolution was passed:

Resolution No. 12

WHEREAS: Certain cities within Marin County have enacted ordinances requiring a fee in addition to the regular permit and inspection fee whenever the building work is specified by segregated contracts,

THEREFORE BE IT RESOLVED: By the State Association of California Architects in its Tenth Annual Convention assembled at Santa Barbara on the 15th and 16th of October, 1937, that such legislation and ordinances are detrimental to the welfare of the building industry in that they are discriminatory and because they penalize the owner by this unnecessary increase in the cost of his building, and

BE IT FURTHER RESOLVED: That this Association assist financially the District Society of Marin County in their efforts to bring about the repeal of such ordinances, and

BE IT FURTHER RESOLVED: That this Association extend the same offer of assistance to other District Societies for the prevention of the enactment of similar legislation, and

BE IT FURTHER RESOLVED: That other organizations of the building industry be informed of this legislation and that their interests be enlisted in the efforts of the State Association of California Architects to bring about the repeal of such legislation.

In pursuance of these directions, the Northern Section Executive Board has appropriated a substantial sum to assist the District Society of Marin County (which is also raising funds among its own members) in securing legal advice. There appears to be considerable ground for believing that these ordinances are unconstitutional; there is no question that they are unfair in discriminating against architects and engineers who hold State Certificates, and against property owners who for reasons of their own desire to let segregated contracts. Even with a general contract let to one man, there are usually several separate contracts; one wonders how the local authorities reconcile these conditions.

EXECUTIVE BOARD SOUTHERN SECTION

At a meeting of the District Advisors, October 8, Louis N. Crawford and Robert H. Orr were elected to succeed themselves upon the Executive Board, State Association of California Architects, Southern Section, for a term of two years.

George B. Allison was elected chairman of the District Advisors.

Those present were: District Advisors—John Walker Smart, Merrill W. Baird, George B. Allison, Paul Robinson Hunter, Robert H. Orr, W. L. Risley, G. Stanley Wilson, Louis N. Crawford, Wm. P. Lodge, E. Keith

Lockhard, Harold E. Burket. Members—A. G. Bailey, L. N. Barcume, M. T. Cantell, Lester A. Cramer, William Diest, C. A. Kelso, Harold A. Edmonson, Harold G. Elwell, Erwood P. Eiden, Wm. J. Meyer, Arthur C. Munson, Francis Joseph Norton, Thos. Franklin Power, Earl C. Rahn, John T. Roth, E. Allen Sheet, Carl E. Sjoberg, Robert T. Train, Carlton M. Winslow and Ira A. Worsford.

CHRISTMAS JINKS

The annual Christmas Jinks, produced by the Producers Council Club for the mutual enjoyment of Association members and their own membership, has been tentatively set for Friday, December 17, 1937. Usual notices will be sent to Bay District architects when the exact time and place have been determined. An entirely new and different program is planned for this year, one which promises to be unusually enjoyable. It would be difficult for any other group to try to reproduce a production of the Producers. Besides their genuine good will to our Association, they possess those qualities of imagination, initiative and energy which are essential for putting over any special program—social as well as business. Long may they produce!

BUSINESS PROSPECTS

Certain facts—and factors—convince some of our hard-headed leaders that the building industry can look to next year with optimism. A recent Babson report says "The Administration in Washington needs tax money. **It must have good business to get it.**" Not only daily press notices, but reliable private advices, indicate an encouraging new attitude on the part of the Government toward business in general and housing business in particular. We suggest that our members can celebrate this holiday season with cheerful anticipation of renewed business activity in the near future.

SOUTHERN CALIFORNIA CHAPTER

At the November meeting of Southern California Chapter, A. I. A., nominations of officers for 1938 and revisions to Chapter by-laws were the principal items of business.

The report of the nominating committee, which was read by Carleton M. Winslow, was as follows: Eugene Weston, Jr., president; Samuel E. Lunden, vice-president; Edgar Bissantz, secretary; Earl T. Heitschmidt, treasurer; George J. Adams, director for the two-year term, and A. C. Zimmerman, director for the three-year term.

It was the sense of the meeting that by-law revisions, as drawn up and approved by the executive committee, be adopted.

Two resolutions concerning the United States Housing Act of 1937, both adopted, were offered by Eugene Weston, Jr., chairman of the Chapter housing committee. One, addressed to the City of Los Angeles, which it is understood, can legally qualify under this act, urged the city to participate and offered to meet expenses of such a movement until Federal funds are forthcoming. The other, addressed to the County of Los Angeles, requested the supervisors to set up legislation that will permit the county to participate and suggested that they appoint a housing authority. Under present laws, it is doubtful if the county can participate.

Gordon B. Kaufmann advised the meeting of steps taken by the State Association of California Architects toward employing a permanent executive secretary to represent the profession. Mr. Kaufmann recommended the employment of such a person and asked the Chapter for an expression of its opinion. The matter was referred to the executive committee for investigation and report.

Guests of the Chapter included Karl Troedsson, a member of the staff at the College of Agriculture, University of Southern California; Phillip Daniels, a graduate of that college, and Graham Latta, a local architect.

SCHOLARSHIP COMPETITION

A nation-wide competition for the 1938 Le Brun Traveling Scholarship is announced by the New York Chapter of the American Institute of Architects. The scholarship, carrying a stipend of $1,400, will be awarded next spring to a deserving and meritorious architect or architectural draughtsman, resident anywhere in the United States, to aid him in paying the expenses of an European trip, lasting not less than six months."

Nominations must be made by members of the Institute before January 15 according to Oliver Reagan of 101 Park Avenue, New York chairman of the scholarship committee. The competition problem will be issued about January 17, calling for drawings to be delivered about March 15.

Candidates for the scholarship, founded by Pierre L. Le Brun "to promote the artistic, scientific, and practical efficiency of the architectural profession," are required by the deed of gift to be between twenty-three and thirty years of age, to have practiced architecture for at least three years, and never to have received any other traveling scholarship. The winner of the competition will be chosen by a jury of three prominent architects.

PARISIAN WINS U. S. SCHOLARSHIP

Henri Madelain of Paris has been awarded a scholarship for travel in the United States by the American Institute of Architects.

M. Madelain is the eighth foreign student of the arts to receive the scholarship, established by William A. Delano and Chester H. Aldrich of New York to advance the Institute's program of international relations. The Institute's Committee on Selection in Paris made the appointment.

YOUNGER MEN TO THE FORE

Revival of building and "a saner approach on the part of architects" are working important changes in the trend of contemporary architecture, Harvey Wiley Corbett, New York architect, says in outlining a lecture program at the Summer Session of Columbia University in which representatives of the architectural profession will participate.

Mr. Corbett foresees the emergence of new and younger leaders in American architecture, which, he predicts, will be less influenced by foreign precedents. Architects face great and alluring opportunities, according to Mr. Corbett, who points out that an enormous amount of building must be done.

"The extreme modernistic, highly stylized character of the last two or three years is settling down to a more rational basis," he continues. "In the long run, architecture is always an expression of the condition of the people; however, it is never an expression of the moment, such as the daily news column, because there is the time lag required between the conception of an architect's idea and the final building; however, speed in building construction has diminished this time lag.

"Architecture is closer to an expression of the condition of the people at a given moment than it formerly was. When people are confused in their minds as to their government, as to their finances, as to security, property rights, social relationships, etc., art in all its forms is equally confused. As the national atmosphere begins to clear, the general art expression also begins to clear.

"In my lectures at Columbia, I will discuss at some length this general idea, pointing out that contemporary architecture—one form of art—never is, and never can be a thing apart. It always is, and always must be, an outgrowth of how the people live, what they think, where they work, and what their human relationships happen to be.

"The trend of the times, as I see it in the field of architecture, will be less and less influenced by foreign precedents, and will become more and more the sincere expression of America's own needs and aspirations. The younger men of the present generation will be the leaders in this idea, because they are freer from intimate associations with the old-fashioned ideas.

"When in any field of art, reasonable prosperity is continuous, it is difficult to change the approach to the design problem, because there is a strong momentum carrying the old along with the new; but the recent depression, which started in Europe many years before it started here, and which has lasted so long here, has practically cancelled the influence of momentum.

"The opportunity is ripe for a fresh, new, and fundamental approach to our own architectural problems. In order to catch up, an enormous amount of building must be done, and I personally believe the opportunities in the field of architecture for the immediate future are very great, very alluring, and highly inspiring."

GOVERNMENT AND BUSINESS

Whether the Administration will readjust its policies to meet new conditions arising from the slower pace of business activity is daily becoming a question of increasing national importance.

Within the Administration itself, there appear to be sharply divergent views as to what measures should be taken.

One group of advisers, representing the moderate and perhaps the majority viewpoint, counsels a shift of present policies. It urges a modification of taxation and spending policies, a firmer attitude toward labor and a more encouraging attitude toward business.

Leaders of this moderate group now privately admit that planned economy and deficit government spending have fallen far short of the recovery mark set by their sponsors.

The only sound alternative, this group agrees, is for the government to concentrate its attention on ways and means to revitalize the capital market and to encourage investment in new enterprises and construction.

Impressive data have been compiled, showing a heavy backlog of unfilled industrial requirements, which could be released as soon as confidence in the future is restored. Heading the list is an accumulated deficit in expansion of the electric power industry, estimated at something like $2,600,000,000. It is contended that the government's policy toward the industry has so frightened capital it has proved impossible to meet financial needs for construction.

A second group, small in number but having great influence, voicing the extreme viewpoint, opposes any relaxation of existing policies and, in fact, wants to go farther in regulating and regimenting economic and social life. This group is urging that, if the current business recession continues, large-scale public spending be resumed.

Whether there will be a clear-cut decision as between these two viewpoints, or a middle course, is anybody's guess.—Washington Review.

PROVISIONAL CERTIFICATES

California State Board of Architectural Examiners November 9 issued provisional certificates to the following persons to practice architecture in California: Lowell W. Pidgeon, 2315 Fair Park Avenue, Los Angeles; Lloyd Ruocco, 401 Spreckels Theater Building, San Diego; Jerome C. DeHetre, 816 N. Willow Street, Compton; Arthur Froelich, 8828 Alcott Street, Los Angeles.

NEUTRA WINS AGAIN

Architect Richard J. Neutra of Los Angeles drew a first award in a national magazine architectural competition for his design of the Mensendieck residence at Palm Springs, owned by Mrs. Grace Lewis Miller, and second award for his design of the home of Mrs. Arthur Hoffman in Hillsborough, near San Francisco.

Obituary

LEO KROONEN, ARCHITECT-BUILDER

Leo Kroonen died of heart disease November 14 at his home in Corona, California, where he practiced architecture.

Born in Holland March 31, 1857, he followed the carpentry trade there in his early life, coming to the United States in 1885. A year later he moved to Los Angeles and in 1887 went to Riverside and the then thriving community of Auburndale, near Corona.

Mr. Kroonen built one of the first homes in Corona and set out the first orange grove in the south Riverside section, hauling water to irrigate it from a nearby canyon. Interested in development of an adequate water supply for Corona district he was an early director of the Temescal Water Company. He was also a director in one of the earliest formed citrus associations of that region.

At one time Mr. Kroonen operated a brick plant in Corona. He built several early schools, including Washington and the first high school buildings in Corona, as well as some of the original country schools in this vicinity. Other buildings to his credit include several citrus packing houses, the Corona city hall; the Corona Odd Fellows hall and the Corona municipal plunge.

He was one of the first subscribers to The Architect and Engineer and had kept up his subscription to the time of his death.

He was a members of the State Association of California Architects, Southern Section.

THOS. S. O'CONNELL, ENGINEER

Thomas Sarsfield O'Connell, state highway engineer of Arizona since 1931, died November 3 following an emergency operation for appendicitis.

Born in San Francisco July 14, 1888, Mr. O'Connell had been resident of Arizona for forty years. Entering the highway department in 1913 as assistant highway engineer, Mr. O'Connell attained national prominence in his chosen field.

Graduating from the University of Arizona, Mr. O'Connell attended West Point, being a member of the the class of 1911. When the United States entered the World War in 1917, Mr. O'Connell was commissioned a captain and went overseas with the 91st Division.

Returning to Arizona in 1919, Mr. O'Connell resumed service with the highway department as location and construction engineer. He was appointed a district highway engineer in 1924 and in 1931 became state highway engineer.

Mr. O'Connell was a member of the board of directors of the American Road Builders Association and member of the executive committee of the American Association of State Highway Officials.

HERBERT R. BREWSTER

Herbert R. Brewster, architect, died at his home in Pasadena, October 30, after an illness of six months. He practiced architecture in New York State for 36 years before establishing a practice in Pasadena 14 years ago. Mr. Brewster designed many fine homes in the Crown City, specializing in English Colonial architecture.

CHARLES C. FRYE, ARCHITECT

Charles C. Frye, 57, died at his home, 8420 Romaine Street, West Hollywood, November 7, of heart disease. Mr. Frye came to Los Angeles from New York 17 years ago. Recently he was architect for the Self-Realization Fellowship Temple, part of the Swami Yogananda project at Encinitas. In 1933 he was appointed first Civil Works Administration director in Los Angeles county but later he resigned to supervise only CWA white collar projects. Prior to residing in Los Angeles Mr Frye practiced architecture in San Francisco.

EMMET G. MARTIN, ARCHITECT

Emmet G. Martin, 48, architect of Los Angeles, passed away November 6, being found lifeless in his office by a caller. Although he had been in poor health death came unexpectedly. Mr. Martin graduated in architecture from an eastern university and possessed unusual ability as a designer. Among his works the most notable was St. Brendans church at Van Ness Avenue and Third Street, Los Angeles. His most recent work was St. Augustin church at Culver City, notable for a new type of steel construction. He is survived by three brothers, Architect A. C. Martin, Rev. Father Joseph Martin and Frank Martin, and four sisters.

DREYER PLANS $30,000 THEATER

Anthony Dreyer, Oregon architect residing at 3409 N. E. Oregon Street, Portland, has just completed plans for a $30,000 theater building which will be erected soon in the Sellwood District, Portland. He has been retained for several years as Multnomah County architect. Mr. Dreyer intends to open a downtown office next spring.

HOUSING EXPERT DINED

Benjamin F. Betts, chief of the housing research department of Purdue University, LaFayette, Indiana, was the honor guest and speaker at a luncheon given Thursday, October 28, by the Tacoma Society of Architects at the Winthrop Hotel. Mr. Betts is making a specialty of prefabricated houses.

With The Engineers

LAST REGULAR MEETING OF 1937

The Structural Engineers Association of San Francisco held its last regular meeting of the year on December 7. There were reports of the regular and special committees, the annual address of President A. V. Saph, Jr., and the annual report of Secretary-Treasurer A. P. Fisher.

In addition to the annual reports the Association elected three directors to succeed Messrs William Adrian, Jesse Rosenwald and John J. Gould, whose two years of directorate had expired and who could not be reelected. The new directors are Harold Hammel, Fred Hall and S. S. Gorman.

The outstanding achievement of the year was the Engineers' Convention at Sacramento in March, when the structural engineers joined with the other engineers of the State to bring about the largest gathering of the profession ever held in California.

DECEMBER MEETING

The December meeting of the San Francisco Section, American Society of Civil Engineers, was addressed by Thomas Stanton, whose subject was "The Role of the Laboratory in the Investigation and Control of Foundations and Materials of Construction." Mr. Stanton is a director of the American Society of Engineers from District 13. His lecture was profusely illustrated with views he had obtained of highway construction over a period of years. As materials and research engineer for the California Division of Highways, Mr. Stanton had an important part in the construction of the San Francisco-Oakland Bay Bridge.

On Tuesday evening, December 21, the last meeting of the year of San Francisco Section, A. S. C. E., will take place. It will be the concluding business meeting of 1937. The program committee has selected many entertaining subjects for the past meetings and this one will be no exception.

Summing up the year's achievements, Chairman Al. Poulter and his committee feel that they were able to fulfill their three duties, namely: (1) to welcome members and visitors, (2) to introduce visitors, new members and Student Chapter Members to Section Members, and (3) to keep a record of attendance and promote good fellowship among the members at all meetings, by the wholehearted cooperation of all those attending the meetings.

The nominating committee, composed of Henry D. Dewell, S. S. Gorman, Charles G. Hyde, A. V. Saph, Jr. and H. C. Vensano, submitted the following nominees for offices to be vacant as of January 1, 1938:

For President: Ralph G. Wadsworth, W.P.A. Deputy Administrator.

For First or Senior Vice President: Fred H. Fowler, Consulting Civil Engineer; Sidney T. Harding, Professor of Irrigation and Consulting Engineer; Otto W. Peterson, Engineer of Construction, Pacific Gas & Electric.

For Second or Junior Vice President: Harold B. Hammill, Consulting Civil Engineer; Leon H. Nishkian, Consulting Engineer; George D. Whittle, Bridge Engineer, U. S. Bureau of Public Roads.

1939 CONVENTION

The Board of Directors of the American Society of Civil Engineers at its recent meeting in Ann Harbor, Michigan, formally accepted an invitation of the San Francisco Section to hold its 1939 Convention in San Francisco during the summer of the World's Fair Year.

PUBLICITY DIRECTOR ILL

William H. Popert of the Columbia Steel Company and publicity director for the San Francisco Section of Civil Engineers, was confined to his home by illness during the early part of the month.

JANUARY JOINT MEETING

The San Francisco Engineering Council has completed arrangements for a joint meeting of the local engineering societies on January 12, 1938, at the auditorium of the Pacific Gas & Electric Company. The speaker will be Dean B. A. Woods; subject, "Air Conditioning."

ENGINEERS LUNCHEONS

The Engineers' Club has set aside Wednesday of each week for a Civil Engineers' luncheon. Mr. Popert says members will find it a convenient place to spend the noon hour, and a good time to meet your Section friends.

ENGINEER IN NEW LOCATION

Edwin F. Rudolph, structural engineer, announces the removal of his offices from 5617 Hollywood Bolevard to suite 210 Wilson Building, 132 W. First Street, Los Angeles.

BIRTHDAY ANNIVERSARY

A. J. Russell, veteran Tacoma architect and member of the firm of Russell, Lance and Muri, recently celebrated his eightieth birthday. Sixteen members of the Tacoma Society of Architects, at the weekly luncheon meeting held in the Y. M. C. A. Building, October 18, observed the cutting of the birthday cake and enjoyed the festivity. Charles T. Pearson presided.

AMERICA GETS A NEW ISLAND

FOUR hundred acres of new territory has been added to the domain of the United States, with the completion of Treasure Island in San Francisco Bay. This, the largest man-made island in the world, will be the site of the 1939 Golden Gate International Exposition, and, after the World's Fair closes, will be a central airport, connected by causeway and ramps to the $77,000,000 transbay bridge.

Formal delivery of the new island by the United States Army Corps of Engineers to the City and County of San Francisco, was celebrated September 26 with fitting ceremonies.

One of the greatest engineering jobs ever undertaken, the construction of Treasure Island, required a concentration of eleven dredges. Eighteen months of continuous pumping were needed.

This huge dredging job, involving the placing of 20,000,000 cubic yards of sand fill within a 17,760 foot sea wall, was carried out by the Army Engineers under a WPA appropriation of $3,803,900. The Army commenced in February, 1936, to build an island 5,520 feet long by 3,400 feet wide in the middle of the world's greatest landlocked harbor between the world's two greatest bridges.

Operations began within a semicircular rock wall at the shallower portions of Yerba Buena Shoals just off the island by the same name. Black sand from the bottom of the bay was pumped through discharge pipes at the rate of 3,000,000 cubic yards a month, gradually raising Treasure Island from a depth of two to twenty-six feet below sea level to an elevation of thirteen feet above mean low tide. Actual volume of sand retained within this seawall is 20,000,000 cubic yards, although, with the intentional loss of soft mud, dredges were required to handle a total of 25,000,000 cubic yards in completing the fill. Leveling was accomplished by hydraulic action as the water drained back into the bay.

Approximately 287,000 tons of rock were used in the three and a third mile wall surrounding the island. This material was brought in by barge from quarries surrounding the Bay.

Lying 900 feet north of Yerba Buena Island, the midpoint of the San Francisco Oakland Bay bridge, Treasure Island is connected with the former island, which is under the jurisdiction of the U. S. Navy, by a causeway 110 feet wide. Via this causeway a six lane highway will link the site of the World's Fair with the arterial traffic streams on the bridge.

Although the reclamation project has just been finished the building program on Treasure Island is well advanced. Already nearly $10,000,000 in Exposition buildings is under construction. Two immense concrete hangars, costing $800,000 and ranking among the largest in the world, are completed and a three story airport terminal structure, also costing close to a million dollars, is nearly two thirds finished.

When the temporary exhibit palaces are swept away at the close of the $50,000,000 Fair, the hangars and terminal will form the nucleus of a new San Francisco municipal air field, the closest-in airport of any large municipality in the country. By means of the highway connections with the bridge, ground transportation to downtown San Francisco will be accomplished within a period of ten minutes.

Approximately one thousand workmen are now engaged in the building activities on Treasure Island. Including the two hangars, which will be used as auxiliary palaces, more than a million square feet of exhibit space will be provided for the Exposition. Six temporary exhibit palaces, averaging 200 feet in width and varying from 415 to 887 feet in length are under construction. Other structures now being erected include four pavilion buildings, ferry slips and ferry terminal, main gates, and the 400-foot central tower, the architectural keynote of the Exposition.

The first unit of a 7,600 foot highway network is under way. A complex system of grade separation, employing overhead crossings and underpasses, will facilitate handling the heavy traffic during the Fair. By means of highway connections at either end of Yerba Buena tunnel vehicles will be able to join the traffic streams going in either direction on the bridge without a left turn. At peak periods, traffic to and from the island, including ferry and automobile passengers, is expected to total 50,000 per hour or 250,000 per day. A parking lot to accommodate 12,000 cars will be provided.

As part of the reclamation project, a large sheltered harbor between the two islands has been dredged to a depth of 35 feet. This harbor known as the "Port of the Trade Winds," will be the scene of many yachting and aquatic events during the 288 days of the Fair. Later it will be used as the seaplane basin for the new airport.

A $600,000 water supply system is being installed on the island. Water will be pumped from San Francisco by pipeline running across the Bay bridge and discharging into a 3,000,000 gallon reservoir now being cut into the solid rock on Yerba Buena Island. Approximately twenty miles of water mains are being laid on the Exposition grounds in addition to many miles of sewers and storm drains. Two hundred fire hydrants will be required by the extensive fire-protection system.

Architecturally the Exposition will present a new type of design termed "Pacific," combining both Occidental and Oriental lines with the modernistic in a pleasing blend that promises to have lasting influence upon American building. Work has already started on a $1,500,000 landscaping and horticulture program to beautify the grounds for the enjoyment of an estimated attendance of 20,000,000.

RANCH HOUSE IN SANTA CLARA COUNTY, CALIFORNIA

SPOTLIGHTS ILLUMINATE THIS INTERESTING GARDEN ON A CALIFORNIA COUNTRY ESTATE

1938 BUILDING FORECAST

Privately financed building and engineering work in 1938 should approximate the same volume as this year, according to Thomas S. Holden, Vice-President of F. W. Dodge Corporation, in a statement on the construction outlook made public recently. However, publicly financed work is likely to continue its decline, resulting in a moderately reduced total volume of construction next year.

The Dodge estimates indicate that 210,000 to 220,000 new family dwelling units are likely to be built in the entire country next year, compared with an estimated 185,000 to 195,000 in 1937, and 160,000 in 1936. This moderate increase in residential building is likely to be accompanied by a volume of commercial building approximately the same as this year's, and declining volume of factories and public and institutional buildings. While combined moderate increases in residential building and moderate decreases in non-residential building would give a total building volume about equal that of 1937, heavy engineering work is also likely to decline somewhat, resulting in a net decrease in total building and engineering volume.

The current recession in building has, to date, been quite moderate in character, having consisted principally in declines in publicly financed work. Privately financed building, both residential and non-residential, continued to run ahead of last year's volume right through the middle of October. During the first nine months of 1937, private construction of all kinds in the 37 Eastern States reached a total of $1,436,994,500, which was 46 per cent ahead of the figure for the corresponding period of 1936, while public building and engineering work has declined 18 per cent from last year.

Expectations of a large and rapid boom in residential building were not justified at any time this year, nor are they justified in anticipatiin for next year, according to the Dodge Corporation's analysis of the situation. Estimates of housing requirements running from 500,000 to 1,000,000 family units a year represent social needs; they do not represent an economic demand at the present stage of partial business recovery. They probably cannot be translated into economic demand in a period of rapidly rising costs but will only be realized on a broad scale by such future improvements in home-financing and home production as will definitely provide better houses at lower costs than at present.

Two important factors are customarily overlooked in most current appraisals of construction industry prospects: Urban population growth in the first half of the current decade was at the rate of 400,000 new persons annually, compared with 1,400,000 per year in the 1920's, according to estimates recently made public by the National Resources Committee. Old-fashioned speculative building booms of the kind anticipated in predictions widely publicized during the past twelve months, have practically always been stimulated by urban and suburban population growth. The second factor is that there is at this moment no great expanding industry, like railroads and automobiles in the past, to stimulate general economic expansion on a broad front and generate the greatly increased purchasing power necessary for a big building boom on rising construction costs. Careful appraisal of the current rises in business and building volume indicates a period of recovery from depression, but not necessarily, as yet, a period of general industrial expansion.

Next year, as viewed by Holden, will probably be neither one of serious recession nor of very rapid recovery progress, almost certainly, not a boom year. It will most likely prove to be a year of consolidating and stabilizing recovery gains, with a slow start in the first quarter and the probability of definite improvement somewhere around the middle of the year.

WINNERS OF CLAY PRODUCTS COMPETITION

AWARDS totaling $3665 have been made to more than forty architects and designers by Structural Clay Products Institute, Inc., Washington, D. C., as prizes and honorable mentions in a group of competitions for designs and photographs of brick and structural clay tile houses. George D. Conner, architect, of Washington, D. C., won $500 first prize for an original small house of five rooms and bath. Atwell John King of New York City won first prize of $500 for his design of a seven-room house and also took second prize of $250 in the small house group. Walter E. Conklin, architect, of Decatur, Georgia, won first prize of $250 for photographs and plans of a completed house of seven rooms; and T. H. Buell & Co., architects, of Denver Colorado, were awarded first prize of $200 for a group of monumental buildings notable for their excellent architectural detail in brick and clay masonry.

Dwight James Baum, F.A.I.A., internationally noted architect of New York, served as chairman of the jury which made the awards.

Entries were received from nearly every State and awards were made to architects and designers in sixteen States and the District of Columbia. New York and California divided first honors with seven awards each. The California winners are:

Competition for design of original small clay masonry houses: Honorable mention, Arthur B. Gallion Berkeley· Jack D. Gilchrest Santa Barbara.

Design of medium-sized houses of clay masonry: Third prize $100, C. J. Paderewski, 1904 Edgemont Street, San Diego; Honorable mention, James W. Rice, Los Angeles.

Photographs and plans of completed houses of clay masonry: Honorable mention to George J. Adams, Los Angeles.

In the division for medium-sized houses: Third prize awarded to H. Roy Kelley, 1102 Architects Building, Los Angeles.

Architectural details of clay masonry: Second prize to Lyle Nelson Barcume, 5369 Wilshire Boulevard, Los Angeles.

The winning designs from California will appear in The Architect and Engineer for January.

Estimator's Guide

Giving Cost of Building Materials, Wage Scale, Etc.

Amounts given are figuring prices and are made up from average quotations furnished by material houses to San Francisco contractors. 3% Sales Tax on all materials but not labor.

All prices and wages quoted are for San Francisco and the Bay District. There may be slight fluctuation of prices in the interior and southern part of the state. Freight or cartage at least, must be added in figuring country work.

Bond—1½% amount of contract.

Brickwork—
Common, $40 to $45 per 1000 laid, (according to class of work).
Face, $100 to $110 per 1000 laid, (according to class of work).
Brick Steps, using pressed brick, $1.25 lin. ft.
Brick Veneer on frame buildings, $ .75 sq. ft.
Common f.o.b. cars, $14.00 at yard. Cartage extra.
Face, f.o.b. cars, $45.00 to $50.00 per 1000, carload lots.

HOLLOW TILE FIREPROOFING (f.o.b. job)

3x12x12 in.	$ 84.00 per M
4x12x12 in.	94.50 per M
6x12x12 in.	126.00 per M
8x12x12 in.	225.00 per M

HOLLOW BUILDING TILE (f.o.b. job)
carload lots.

8x12x5½	$ 94.50
6x12x5½	73.50

Building Paper—

1 ply per 1000 ft. roll	$3.50
2 ply per 1000 ft. roll	5.00
3 ply per 1000 ft. roll	6.25
Brownskin, 500 ft. roll	4.50
Brownskin, Pro-tect-o-mat, 1000 ft. roll	9.00
Sisalkraft, 500 ft. roll	5.00
Sash cord com. No. 7	$1.20 per 100 ft
Sash cord com. No. 8	1.50 per 100 ft
Sash cord spot No. 7	1.90 per 100 ft
Sash cord spot No. 8	2.25 per 100 ft

Sash weights cast iron, $50.00 ton.
Nails, $3.50 base.
Sash weights, $45 per ton.

Concrete Work (material at San Francisco bunkers)—Quotations below 2000 lbs. to the ton. $2.00 delivered.

No. 3 rock, at bunkers	$1.45 per ton
No. 4 rock, at bunkers	1.45 per ton
Elliott top gravel, at bunkers	2.10 per ton
Washed gravel, at bunkers	1.45 per ton
Elliott top gravel, at bunkers	2.10 per ton
City gravel, at bunkers	1.45 per ton
River sand, at bunkers	1.40 per ton
Delivered bank sand	1.00 cu. yd.

Note—Above prices are subject to discount of 2% per ton on invoices paid on or before the 10th of month, following delivery.

SAND
Del Monte, $1.75 to $3.00 per ton.
Fan Shell Beach (car lots, f.o.b. Lake Merjelle), $2.75 to $4.00 per ton.

Cement (paper sacks) $3.00 bbl., warehouse or delivery.
Car-load lots delivered $2.70, f.o.b. cars $2.52
(Cloth sacks) $3.00 bbl..
Rebate 10 cents bbl. cash in 15 days.
Atlas White, Calaveras White, Medusa White { 1 to 100 sacks, $1.50 sack, warehouse or delivery; over 100 sacks, $1.25; 2% discount 10th of month.
Forms, Labors average $40.00 per M.
Average cost of concrete in place exclusive of forms, 35c per cu. ft.; with forms, 60c.
4-inch concrete basement floor ..... 12½c to 14c per sq. ft.
Rat-proofing 7½c
Concrete Steps ..... $1.25 per lin. ft.

Dampproofing and Waterproofing—
Two-coat work, 20c per yard.
Membrane waterproofing—4 layers of saturated felt, $4.50 per square.
Hot coating work, $1.80 per square.
Medusa Waterproofing, 15c per lb., San Francisco Warehouse.
Tricocel waterproofing.

Electric Wiring—$12.00 to $15.00 per outlet for conduit work (including switches).
Knob and tube average $3.50 per outlet.

Elevators—
Prices vary according to capacity, speed and type. Consult elevator companies. Average cost of installing an automatic elevator in four-story building, $2800; direct automatic, about $2700.

Excavation—
Sand, 60 cents; clay or shale $1 per yard.
Teams, $12.00 per day.
Trucks, $22 to $27.50 per day.
Above figures are an average without water. Steam shovel work in large quantities, less; hard material, such as rock, will run considerably more.

Fire Escapes—
Ten-foot galvanized iron balcony, with stairs, $115 installed on new buildings; $140 on old buildings.

Floors—
Composition Floors—18c to 35c per sq. ft. In large quantities, 16c per sq. ft. laid.
Mosaic Floors—80c per sq. ft.
Duraflex Floor—23c to 30c sq. ft
Rubber Tile—50c to 75c per sq. ft.
Terazzo Floors—45c to 60c per sq. ft
Terazzo Steps—$1.60 lin. ft.

Hardwood Flooring (delivered to building)—

13-16x3¼" T. & G. Maple	$120.00 M ft
1 1-16x2¼" T. & G. Maple	132.00 M ft
⅞x3½ sq. edge Maple	140.00 M ft.

	13-16x2¼" T&G	⅜x2" T&G	5-16x2" Sq Ed.
Clr. Qtd. Oak	$200 00 M	$150.00 M	$180 M
Sel. Qtd. Oak	140.00 M	120.00 M	135 M
Clr. Pla. Oak	135.00 M	107.00 M	120 M
Sel. Pla. Oak	120.00 M	88.00 M	107 M
Clear Maple	140 00 M	100.00 M	
Laying & Finishing	13c ft.	11 ft.	10 ft.

Wage—Floor layers, $7.50 per day.

Glass (consult with manufacturers)—
Double strength window glass, 20c per square foot.
Quartz Lite, 50c per square foot
Plate 75c per square foot (unglazed) in place, $1.00.
Art $1.00 up per square foot.
Wire (for skylights), 40c per sq. foot.
Obscure glass, 30c square foot.
Glass bricks, $2.40 per sq. ft., in place.
Note—If not stipulated add extra for setting.

Heating—
Average, $1.90 per sq. ft. of radiation according to conditions.
Warm air (gravity) average $40 per register.
Forced air, average $60 per register.

Iron—Cost of ornamental iron, cast iron etc., depends on designs.

Lumber (prices delivered to bldg. site).

No. 1 common	$38.00 per M
No. 2 common	34.00 per M
Select O. P. common	39.00 per M
2x4 No. 3 form lumber	26.00 per M
1x4 No. 2 flooring VG	65.00 per M
1x4 No. 3 flooring VG	55.00 per M
1x6 No. 2 flooring VG	65.00 per M
1¼x4 and 6, No. 2 flooring	70.00 per M

Slash grain—

1x4 No. 2 flooring	$50.00 per M
1x4 No. 3 flooring	40.00 per M
No. 1 common run T. & G.	35.00 per M
Lath	8.00 per M

Shingles (add cartage to price quoted)—

Redwood, No. 1	$1.10 per bdle
Redwood, No. 2	.90 per bdle.
Red Cedar	1.00 per bdle

Millwork—Standard.
O. P. $110.00 per 1000. R. W., $115.00 per 1000 (delivered).
Double hung box window frames, average with trim, $6.50 and up, each.
Doors, including trim (single panel, 1¾ in. Oregon pine) $8.00 and up, each.
Doors, including trim (five panel, 1¾ in. Oregon pine) $6.50 each.
Screen doors, $4.00 each.
Patent screen windows, 25c a sq. ft.
Cases for kitchen pantries seven ft. high per lineal ft., $8.00 each.
Dining room cases, $8.00 per lineal foot.
Labor—Rough carpentry, warehouse heavy framing (average), $17.50 per M.
For smaller work average, $35.00 to $45.00 per 1000.

Marble—(See Dealers)

Painting—
- Two-coat work ..... 35c per yard
- Three-coat work ..... 45c per yard
- Cold Water Painting ..... 12c per yard
- Whitewashing ..... 4c per yard
- Turpentine, 75c per gal., in 5 gal. cans, and 65c per gal. in drums.
- Raw Linseed Oil—$1.02 gal. in bbls.
- Boiled Linseed Oil—$1.05 gal. in bbls.
- Medusa Portland Cement Paint, 20c per lb.

Carter or Dutch Boy White Lead in Oil (in steel kegs).

	Per Lb.
1 ton lots, 100 lbs. net weight	11 3/4c
500 lbs. and less than 1 ton lots	12c
Less than 500 lb. lots	12 1/2c

Dutch Boy Dry Red Lead and Litharge (in steel kegs).

1 ton lots, 100 lb. kegs, net wt.	11 3/4c
500 lbs. and less than 1 ton lots	12c
Less than 500 lb. lots	12 1/2c

Red Lead in Oil (in steel kegs)

1 ton lots, 100 lb. kegs, net wt.	12 1/4c
500 lb. and less than 1 ton lots	12 1/2c
Less than 500 lb. lots	13c

Note—Accessibility and conditions cause wide variance of costs.

Patent Chimneys—

6-inch	$1.25 lineal foot
8-inch	1.75 lineal foot
10-inch	2.25 lineal foot
12-inch	3.00 lineal foot

Plastering—Interior—

	Yard
1 coat, brown mortar only, wood lath	$0.75
2 coats, lime mortar hard finish, wood lath	.80
2 coats, hard wall plaster, wood lath	.85
3 coats, metal lath and plaster	1.30
Keene cement on metal lath	1.30
Ceilings with 3/4 hot roll channels metal lath	.75
Ceilings with 3/4 hot roll channels metal lath plastered	1.50
Single partition 3/4 channel lath 1 side	.85
Single partition 3/4 channel lath 2 sides 2 inches thick	1.50
4-inch double partition 3/4 channel lath 2 sides	1.30
4-inch double partition 3/4 channel lath 2 sides plastered	3.00

Plastering—Exterior—

	Yard
2 coats cement finish, brick or concrete wall	$1.00
2 coats Calaveras cement, brick or concrete wall	1.35
3 coats cement finish, No. 18 gauge wire mesh	1.50
3 coats Calaveras finish, No. 18 gauge wire mesh	1.75

Wood lath, $7.50 to $8.00 per 1000.
2.5-lb. metal lath (dipped) .17
2.5-lb. metal lath (galvanized) .20
3.4-lb. metal lath (dipped) .22
3.4-lb. metal lath (galvanized) .28
3/4-inch hot roll channels, $72 per ton.
Finish plaster, $18.90 ton; in paper sacks.
Dealer's commission, $1.00 off above quotations.
$13.85 (rebate 10c sack).
Lime, f.o.b. warehouse, $2.25 bbl.; cars, $2.15
Lime, bulk (ton 2000 lbs.), $16.00 ton.
Wall Board 5 ply, $50.00 per M.
Hydrate Lime, $19.50 ton.

Plasterers Wage Scale	$1.25 per hour
Lathers Wage Scale	1.25 per hour
Hod Carriers Wage Scale	1.10 per hour

Composition Stucco—$1.80 to $2.00 sq. yard (applied).

Plumbing—
From $70.00 per fixture up, according to grade, quantity and runs.

Roofing—
- "Standard" tar and gravel, $6.50 per sq. for 30 sqs. or over.
- Less than 30 sqs. $7.00 per sq.
- Tile, $20.00 to $35.00 per square.
- Redwood Shingles, $8.00 per square in place.
- Copper, $16.50 to $18.00 per sq. in place.
- Cedar Shingles, $9.00 sq. in place.
- Recoat, with Gravel, $3.00 per sq.
- Asbestos Shingles, $15 to $25 per sq laid.
- Slate, from $25.00 to $60.00 per sq. laid according to color and thickness.

Sheet Metal—
- Windows—Metal, $1.75 a sq. foot.
- Fire doors (average), including hardware $1.75 per sq. ft.

Skylights—(not glazed)
- Copper, 90c sq. ft. (flat).
- Galvanized iron, 30c sq. ft. (flat).
- Vented hip skylights 60c sq. ft.

Steel—Structural
- $110 ton (erected), this quotation is an average for comparatively small quantities. Light truss work higher. Plain beams and column work in large quantities $80 to $90 per ton cost of steel; average building, $95.00.

Steel Reinforcing—
$80.00 to $120.00 per ton, set.

Stone—
- Granite, average, $6.50 cu. foot in place
- Sandstone, average Blue, $4.00, Boise $3.00 sq. ft. in place.
- Indiana Limestone, $2.80 per sq. ft. in place.

Store Fronts—
- Copper sash bars for store fronts, corner center and around sides, will average 75c per lineal foot.
- Note—Consult with agents.

Tile—Floor, Wainscot, etc.—(See Dealers)
- Asphalt Tile—18c to 28c per sq. ft. installed.

Venetian Blinds—
40c per square foot and up. Installation extra.

THE BUILDERS' EXCHANGE OF SAN FRANCISCO STANDARD WAGE SCALE

For mechanics employed on construction work in the Bay Region. Effective September 1, 1937

CRAFT	Journeymen Mechanics
Asbestos Workers	$ 8.00
Bricklayers (6h-5d)	10.50
Bricklayers' Hodcarriers (6h-5d)	6.75
Cabinet Workers (Outside) (5d)	8.00
Caisson Workers (Open)	6.40
Carpenters (8h-5d)	9.00
Cement Finishers (8h-5d)	9.00
Cork Insulation Workers (8h-5d)	9.00
Electric Workers (8h-5d)	11.00
Electrical Fixture Hangers	8.00
Elevator Constructors	10.40
Engineers, Portable & Hoisting	9.00
Glass Workers (8h-5d)	9.68
Hardwood Floormen	9.00
Housesmiths, Architectural Iron (Shop) (8h-5d)	9.00
Housesmiths, Architectural Iron (Outside) (8h-5d)	10.00
Housesmiths, Reinforced Concrete or Rodmen (8h-5d)	10.00
Iron Workers (Bridge and Structural) Including Engineers (8h-5d)	12.00
Laborers, Building (8h-5d)	$ 6.00
Laborers, Common (8h-5d)	6.00
Lathers, Channel Iron (6h-5d)	9.00
Lathers, All Others	9.00
Marble Setters (8h-5d)	10.50
Marble Setters' Helpers (8h-5d)	5.00
Millwrights	9.00
Model Makers ($1.50 per hr-6h)	9.00
Modelers ($2 per hr-6h)	12.00
Model Casters	7.20
Mosaic and Terrazzo Workers (Outside)	9.00
Painters (7h-5d)	8.50
Painters, Varnishers and Polishers (Outside)	9.00
Pile Drivers and Wharf Builders	9.00
File Drivers' Engineers	10.00
Plasterers (6h-5d)	9.00
Plasterers' Hodcarriers (6h-5d)	7.50
Plumbers (8h-5d)	11.00
Roofers, Composition (8h-5d)	9.00
Roofers, All Others (8h-5d)	8.00
Sheet Metal Workers (8h-5d)	10.00
Sprinkler Fitters	10.00
Steam Fitters (8h-5d)	$11.00
Stair Builders (8h-5d)	9.00
Stone Cutters, Soft and Granite (8h-5d)	8.00
Stone Setters, Soft and Granite	12.00
Stone Derrickmen	9.00
Tile Setters (8h-5d)	10.50
Tile Setters' Helpers (8h-5d)	6.50
Tile, Cork and Rubber (8h-5d)	9.00
Welders, Structural Steel Frame on Buildings	11.00
Welders, All Others on Buildings	9.00
Dump Truck Drivers, 2 yards or less	6.00
Dump Truck Drivers, 3 yards	6.50
Dump Truck Drivers, 4 yards	7.00
Dump Truck Drivers, 5 yards	7.00
Dump Truck Drivers, 6 yards	7.50
Truck Drivers of Concrete Mixer Trucks:	
2 yards or less	6.50
3 yards	7.00
4 yards	7.50
5 yards	7.50
6 yards	8.00

GENERAL WORKING CONDITIONS

1. Eight hours shall constitute a day's work for all crafts except as otherwise noted.
2. Plasterers' Hodcarriers, Bricklayers' Hodcarriers, Roofers' Laborers, and Engineers, Portable and Hoisting, shall start 15 minutes before other workmen, both at morning and at noon.
3. Five days, consisting of not more than eight hours a day, on Monday to Friday inclusive, shall constitute a week's work.
4. Transportation costs in excess of twenty-five cents each way shall be paid by the contractor.
5. Overtime shall be paid as follows: For the first four hours after the first eight hours, time and one-half. All time thereafter shall be paid double time. Saturdays (except Laborers), Sundays and holidays, from 12 midnight of the preceding day, shall be paid double time.
6. On Saturday, Laborers shall be paid straight time for an eight-hour day.
7. Where two shifts are worked in any twenty-four hours, shift time shall be straight time. Where three shifts are worked, eight hour's pay shall be paid for seven hours on the second and third shifts, allowing one-half hour for lunch.
8. All work, except as noted in paragraph 9, shall be performed between the hours of 8 a.m. and 5 p.m.
9. In emergencies, or where premises cannot be vacated until the close of business, men then reporting for work shall work at straight time. Any work performed on such jobs after midnight shall be paid time and one-half up to four hours of overtime and double time thereafter, provided, that if a new crew is employed on Saturdays, Sundays or holidays which has not worked during the five preceding days, such crew shall be paid time and one-half.
10. Recognized holidays to be: New Year's Day, Decoration Day, Fourth of July, Labor Day, Admission Day, Thanksgiving Day, Christmas Day.
11. Men ordered to report for work, for whom no employment is provided, shall be entitled to two hours 'pay.

ART and ARCHITECTURE IN AMERICA HAS COME OF AGE

AMERICA has reached artistic maturity, Dean Leopold Arnaud of the Columbia University School of Architecture declares in his annual report to Dr. Nicholas Murray Butler, president of the University. The development of a national architecture which is no longer imitative, and the increasing tendency of European architectural students to study in the United States, are cited by Dean Arnaud as proof that art and architecture in this country have come of age.

"Until relatively few years ago, American students flocked to Europe to study art and architecture, and very few Europeans were interested in coming here to further their artistic studies," Dean Arnaud says.

"Within the last ten or fifteen years this state of affairs has changed considerably, for now comparatively few Americans are going to European schools of architecture, while Europeans are beginning to come to the United States not only for travel and investigation but also for matriculation in our schools. American architecture has reached maturity. It is no longer a colonial or an imitative architecture.

"This is an obvious fact, even though contemporary architecture in this country does resemble in many respects the contemporary architecture of other countries. This international resemblance occurred also during the Gothic and Renaissance periods. Yet these styles were variously developed in the different countries, as the social and cultural movements of which these styles gave evidence swept the Western world.

"The fact is that at certain intervals there is a period of general change and development during which people in all the regions affected live in somewhat the same way—on the same level of civilization—with the result that they build approximately the same way, using similar structural and esthetic principles, but allowing always for the many local variations resulting from differences of climate, terrain, and traditions.

"In artistic taste, America is very conservative and we do, to some extent, look to Europe for models of expression. We must concede the fact that in Europe there exists a greater capacity for creating new esthetic forms. When we borrow, however, we adapt rather than copy, which is an entirely legitimate way of using derivations. The skyscraper, though it is far from typical of the majority of buildings in the United States, is conclusive evidence that we are engineers of the first order, and that we can vest our feats of engineering with equally new, daring, and fitting esthetic forms.

"In America, the outstanding excellence of our contemporary architecture is in planning, the economic and utilitarian value of which need scarcely be expounded.

"But fine planning also, in large part, determines the esthetic quality of the building; for the artistic form today does not depend upon applied decoration, but is rather the expression of structure, material, and interior arrangement of space. These elements determine the composition of the voids and solids and of the general mass. We can justly say that in planning, and also in mechanical equipment, America is well in advance of most other national developments of contemporary architecture.

"The mechanical excellence achieved in this country is also influencing many of the details of buildings such as mouldings, hardware, and metal work of all kinds. We have achieved a particularly dexterous use of the machine. Moreover, the fine hand finish applied to machine-made material might almost be considered as the development of a new craft, and one in which we excel in this country.

"In trying to visualize a composite example of contemporary American architecture, there may be some difficulty, for this is a vast country, comprehending great variety of climate and terrain, so that regional expressions will necessarily develop to comply with these different local conditions.

"Also in certain regions the forms of the colonial styles are deeply rooted, as in New England or California, and traces of these forms will doubtless persist in these localities. But these variations confirm rather than deny the statement that American architecture has reached a mature and independent development."

Six European students, a Canadian, and a Cuban are attending the School of Architecture this year, Dean Arnaud reports. From England are Donald Reay of Cheshire and Monte Bryer, Commonwealth Fellows; and Harry Robson of Liverpool. Filippo Rovigo is exchange student from the University of Rome. Two Hungarians, Aladar and Viktor Olgyay, twin brothers, are here from Budapest to study American methods of design and construction. William MacLaurin of Victoria, B. C., and Ignacio Mavarrete of Havana represent Canada and Cuba.

Fitness for the practice of architecture, according to Dean Arnaud, implies more than theoretical knowledge or empirical training. "It requires discriminating taste, and specific attainment in the whole range of techniques by which fine designs and good structures are produced," he asserts.

"It is of utmost importance to any artist devoting his energies to the production of any one of the creative arts to be adequately familiar with the other arts. Without this association, especially during student years, the best results cannot be obtained; and so it is imperative that, together with the course in architecture, and in close union with it, there should be well-developed courses in painting and sculpture, not only for the comparatively small amount of work that the architects will themselves do there, but also for the reciprocal contact that will be established among the architects, painters, and sculptors."

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CALIFORNIA MISSIONS

California's famous old Missions, with their historical and romantic backgrounds, annually attract thousands of visitors. Twenty-one Franciscan Missions were founded by the Rev. Fray Junipero Serra and his colleagues, extending from San Diego to what now is Sonoma County. Some are in ruins, others have been restored, all are preserved as priceless landmarks. Because of recent widespread revival of interest in the old Missions, Earl Lee Kelly, Director of the Department of Public Works, at the request of Governor Frank F. Merriam, has prepared for the benefit of visitors, brief histories of them with directions on how to reach them over California highways. For the purposes of this series, the Missions will be taken up in the order of their location from south to north rather than in the sequence of their founding. The FIRST installment follows:

CALIFORNIA'S twenty-one Franciscan Missions were established by members of the Order of Friars Minor, led and inspired by Fray Miguel Joseph Serra, famous in history as Father Junipero Serra.

St. Francis of Assisi, Italy, founded the Order of Friars Minor, better known as the Order of Franciscan Monks, in 1209. It is a missionary brotherhood bound together by the vows of Poverty, Obedience and Chastity. Leaders of the Order in the seventeenth century conceived plans for a communal mission life in which Friars might create protected establishments and gather about them in family groups aboriginal people among whom they worked. Experimented with for the first time at Sinaloa, Mexico, in 1611 the plan proved successful and was adopted by the Jesuit Order in Lower California. The system was perfected by the Franciscans in Alta (Upper) California, which now is the State of California.

To Father Serra belongs the credit for the far-flung perfect mission system which played so large a part in the early history of this State.

Born in humble circumstances in the Island of Majorca in 1713, Miguel Joseph Serra entered the Franciscan Order before he was seventeen. He took the name of Junipero out of reverence for the chosen companion of St. Francis and as a youth dedicated himself to missionary work. It was not until 1749, however, that the opportunity for service in foreign fields came to him. In that year, to his unbounded joy, he and Father Francesco Palou, his friend and biographer, were appointed members of a group of priests requested by the College of San Fernando, Mexico, for duty in the New World.

Of Father Serra's long and arduous trip from Majorca to the City of Mexico much has been written by that faithful chronicler, Father Palou, and many historians and writers. It is related that when Father Serra arrived

at Vera Cruz so eager was he to plunge into his new apostolic duties that he would not wait for the mules and wagons, which were to transport him and his colleagues to Mexico City, and which had been delayed, and so set out on foot for his destination. He paid dearly for his impetuosity. An ulcer developed in one of his legs and throughout his life he suffered from it. On several occasions the infection brought him near to death.

Father Serra engaged in missionary work in Mexico for nearly nineteen years and then was rewarded by appointment as president of the Missions of California which, following expulsion of the Jesuits in 1768, had passed into the control of the Franciscans. There were thirteen of these missions, all in Lower California. Father Serra was fifty-five years of age when his chance to extend the missions to Upper California came.

Jose de Galvez had been sent out to New Spain by Carlos III as visitador general of the provinces with instructions to establish military posts at San Diego and Monterey to prevent encroachments of the English and Russians. Announcing organization of an expedition into the north, Galvez stated that its purpose was "to establish the Catholic faith among a numerous heathen people, submerged in the obscure darkness of paganism, and to extend the dominion of the King, our Lord, and protect this peninsula from the ambitious views of foreign nations."

Assembling his forces at Santa Ana, near La Paz, Galvez invited Father Serra, then at Loreto, to visit him. Junipero enthusiastically made the long trip to Santa Ana and inspired by the prospect of a great new missionary field, joined up with Galvez.

The soldier and the priest decided that their joint expedition should be divided and sent to San Diego in two sections, one by land and one by sea. Three ships, the San Carlos, the San Antonio and San Joseph, carrying troops and four missionaries, sailed from La Paz on January 9, February 15 and June 16, 1769, in the order named.

Driven off her course by storms, the San Carlos arrived at San Diego twenty days after the San Antonio, although she had sailed five weeks earlier, and of her crew all but one sailor and the cook had succumbed to scurvy and many of the soldiers had died. The San Antonio lost eight of her crew from the same disease. The San Joseph was lost at sea.

The land expedition was divided into two divisions under Captain Fernando Rivernay Moncada and Governor Don Gaspar de Portola. Captain Moncada led the advance detachment and Portola followed. Father Serra was to have accompanied the Governor, but when the date of departure came his ulcerous leg kept him in bed and Portola went on without him.

It was not until March 28, several weeks later, that Father Serra with two soldiers and a servant, set out on muleback to overtake the expedition. He suffered greatly en route, but caught up with Portola. His condition became so grave that the Governor besought him

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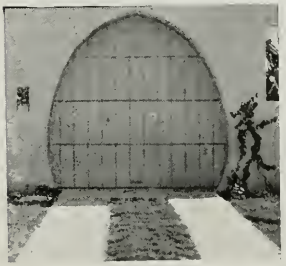

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to return to San Fernando for treatment. This Junipero would not do. His life was despaired of.

And then, records Father Palou, the indomitable Serra, after offering up a prayer, called one of the muleteers and said to him: "Son, do you not know how to make a remedy for the ulcer on my foot and leg?" And the muleteer answered: "Father, how should I know of any remedy? Am I a surgeon? I am a mule-driver, and can only cure harness-wounds on animals." "Then, son," Father Serra directed, "consider that I am an animal and that this ulcer is a harness-wound and prepare for me the same medicament as you would make for a beast."

Unwillingly, the muleteer obeyed, applied his preparation to the infected leg and to the astonishment of all, the good Father slept that night and the next morning was able to resume the journey.

After many hardships, Portola reached San Diego on July 1, 1769. There he found Moncada and his force and the San Carlos and San Antonio with the surviving members of the sea expedition. And there Father Serra found his new field of endeavor of which he long had dreamed. Next: Mission San Diego de Alcala.

COLUMBIA STEEL TO BUILD

Construction of a new $150,000 office building to house the Southern California sales force of the Columbia Steel Company has been started on property adjoining the company's warehouse at Second Street and Slauson Avenue, Los Angeles.

The building will be of modified modern design, 183 feet long and 41 feet wide and will consist of two floors and pent house, with an area of 17,089 square feet of office space.

Designed by Earl Heitschmidt, architect, the structure will have steel frame with all steel members fireproofed throughout with concrete. Concrete walls, used for the exterior of the building, will have a developed strength to withstand horizontal force in any direction. No Stucco will be used. Instead an architectural effect will be obtained from poured concrete walls.

When completed it will be furnished throughout with steel furniture of the latest design. It will have a combined heating and air conditioning system operated on a zone control basis thus allowing different portions of the building to maintain atmospheric conditions within the comfort zone.

Among the numerous benefits afforded by the new building will be increased safety to employes by construction which meets local requirements for earthquake resistance, improved working conditions by the provision of air conditioning, lighting, sanitary and communication facilities.

Another improvement will be a 7 foot concrete wall, 320 feet in length, surrounding a paved parking space having an area of 7500 feet.

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LANGLEY '38 SCHOLARSHIPS

The American Institute of Architects from January 1 to March 1, 1938, will receive proposals of candidates for Edward Langley Scholarships for the year 1938. Awards will be announced about June 1, 1938.

These scholarships are awarded annually for advanced work in architecture, for study, travel or research, as the holder of the scholarship elects. Awards to undergraduates are precluded, but awards may be made to architectural draftsmen who desire to do undergraduate work or take special courses in architectural schools. An award in a succeeding year to a holder of a scholarship is not precluded.

Competitive examinations will not be used as a method of selection.

The awards will be made and the grants determined by a committee of the Board of Directors of the Institute, according to the character, ability, need, and purpose of each candidate and the funds that are available. Only a very limited number of awards can be made in any year, so, to avoid unnecessary disappointment, a candidate should not be proposed unless his qualifications are outstanding and it is evident the profession will be benefited by an award to him.

The scholarships are open to all persons engaged in the profession of architecture. To facilitate making the awards, such persons are grouped as follows:

Group 1.

Architects in active practice; architectural draftsmen employed by architects, whether the draftsmen are engaged in drafting, writing specifications, surveying, or acting as executives, and whether or not they are college graduates.

Group 2.

Teachers in schools of architecture; students about to graduate from such schools; post-graduate students of such schools who are engaged in post-graduate work either in college or in travel.

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Approximately 1000 gallons of coal tar paint will be required for the protective covering on the railway deck before the ties are laid.

Concrete for the basement floor of the center unit of the San Francisco terminal has been completed, while pile driving in the west unit of the 700-foot structure is within ten per cent of completion. This work on the east unit is within ninety per cent of completion. Concrete foundations are finished in the center unit, and are seventy-five per cent complete in the west unit.

Work is progressing rapidly on the San Francisco viaduct section of the railway system, according to Engineer Purcell.

In the East Bay sector of the Bridge Railway System, work on the Port of Oakland highway overhead, the Interurban Electric (S. P.) "Y" Overhead at 26th Street, and the railway overhead at the yards east of the Toll Plaza, is rapidly progressing.

In Rochester, N. Y., the General Railway Signal Company, contractors for the $1,369,000 signal and interlocking work, are completing arrangements for initial delivery of material this month.

Other contracts now under way include the trackwork in the East Bay yard and contract for the overhead and feeders in the yard.

MODEL HOBBY ROOMS

Hobby rooms, designed especially for the pursuit of various recreational and educational activities, promise to be one of the unusual features of the Homes and Garden exhibit of the 1939 Golden Gate International Exposition on San Francisco Bay.

Under the "new leisure" hobbies have won a definite place in American home life. So great has become the interest in these avocations, ranging from butterfly mounting to the acquisition of dinosaur bones and totem poles, that the result is already manifest in home design. Children and parents, equally hobby-minded, have built hobbies into houses.

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No longer is it the sewing room, kitchen, pantry or sunroom which throws the architect's preliminary plans out of joint. Today the gun room, miniature modeling studio, or amateur scientific laboratory is of major importance. This does not necessarily mean that the housewife has lost her say-so in home planning, for she is often the ardent hobbyist of the family. In such a case it is apt to be a collection den for antiques, dolls, or costumes around which the home must be built.

A large area in the Homes and Gardens Building of the $50,000,000 World's Fair of the West will be devoted to a series of model rooms for the enthusiastic hobbyist. This display will emphasize the fact that it is unnecessary to have the living room cluttered up with rusty swords and dented armor, or to have the workshop located in so precarious a place as a corner in the kitchen. With a little planning the hobby room, whether it be a well-appointed den of the specimen collector of baseball bats, or the disorganized laboratory of the scientific experimenter, can become the showplace of the home.

In addition to elaborately planned rooms with special cabinets and shelving for the showing of collections, several displays will illustrate the advantage to which unused basement or attic space can be put by inexpensive alterations. This section of the exhibit is expected to include a full-sized game room, gun room, gym, tap room, wine cellar, wood turning shop, and art studio.

A councilor committee of leading interior decorators, architects and stylists, including Edwyn A. Hunt, Ben Davis, Charles F. Maury, F. Eldon Baldauf and Marta K. Sironen, is in charge of plans for the proposed hobby room exhibit. Harry H. Daley is head of the Homes and Gardens Division of the Exposition.

DESCRIBES FAIR LAYOUT

"Diffusion of magnets" to insure complete circulation of visitors is the deliberate principle behind the ground plan of the 1939 Golden Gate International Exposition, it is explained by Arthur Brown, Jr., chairman of the

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Architectural Commission of the Fair.

Points of vivid interest, and of necessary utility, such as main entrances, are located at planned intervals in every quarter of compact "Treasure Island" on San Francisco Bay. Areas devoted to commercial exhibits are surrounded by highlights in visitor attraction, and the finest architectural vistas of the $50,000,000 Fair are framed by buildings housing these industrial displays.

Clear and simple routes connect these scattered points of focal interest, yet the visitor in going from one to another will find encouragement at every step to pause and inspect the wares of exhibitors. "Our object is to saturate the Exposition evenly everywhere, not merely at salient points of timely interest," says Mr. Brown.

Thus, outstanding governmental groups, including the $5,000,000 California buildings, the $1,500,000 Federal group and the colorful Pacific Basin project are laterally opposite the main entrances to the Exposition city. The Midway and Theater of the Sky are longitudinally opposite the water-sports area at the Port of the Trade Winds. Every visitor will traverse the compact island, from end to end and from side to side by different routes, according to the plan, giving each section of exhibit space its share of attention.

"Millions of visitors, no matter how many, are of no value to an exhibitor unless they are circulated past his display," says Mr. Brown, explaining the practical basis of the Exposition layout. It has been possible to achieve near perfection in circulation because the Western World's Fair is being built upon a 400-acre island reclaimed especially for the Exposition, and no compromises with existing street plans or groupings are necessary. This has been true of no other World's Fair.

It will be, as nearly as careful planning can make it, a business district with every street the "main stem," enjoying during 1939 a steady stream of visitors in gala mood, mingling education and self-modernization with entertainment.

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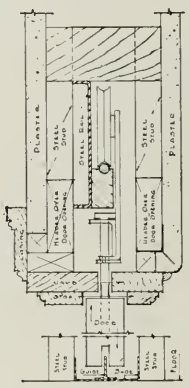

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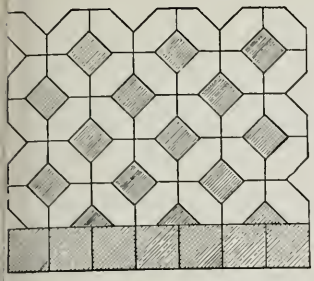

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WRITTEN EXAMINATION FOR CONTRACTORS LICENSE

Adoption of rules and regulations setting up a written examination for applicants, was the major business of the Contractors' State License Board of California at its recent meeting in Eureka. Resolutions commending the trade journals for their assistance to the board and support of the construction industry and relating to the importance of the contractor in construction economy, were accepted.

The new program, introduced by the rules and regulations committee, of which S. G. Johnson is chairman, consists of a new set of rules and regulations, a new application form, and a secret fund of questions for use in written examinations to be rotated by the registrar.

Hereafter, applicants will have to secure sponsors, as has been required in the past. Individuals must secure seven sponsors, including two licensed architects, engineers or contractors, two owners for whom they have worked in an executive capacity, two material dealers and one banking official.

Members of copartnerships or officers of corporations must secure four sponsors each, consisting of one each in the four classes.

A written examination will be given to each person whose application is in satisfactory order. In the case of a corporation or a copartnership, the responsible managing officer or one of the copartners must take the examination. However, in the case of an individual or a firm which desires, the examination may be taken by a responsible managing construction officer who may be in reality only an employee, but in such a case the license becomes nullified when that individual leaves the employ of the licensee.

This will permit men of financial capacity but without construction experience to employ a qualified construction superintendent who passes the board's test, and then to secure a license.

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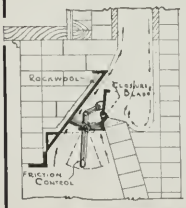

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NOTES AND COMMENTS

[Concluded from Page 2]

lords this winter when most of the new leases are made. When the rent goes up, the Jones family may decide to build anyway, in spite of the higher cost of materials and labor. Ten thousand families in the State, prodded by increased rents into building before prices go still higher, would help to set California building back on the main track again.

* * *

Science and engineering are creating a new architectural style international in scope, Bergman S. Letzler, Louisville architect, recently declared in a paper read before the Kentucky Chapter of The American Institute of Architects. The economic collapse following the World War has forced a fuller realization of the possibilities inherent in scientific developments, he pointed out.

"Every great period of architecture passes through three stages," according to Mr. Letzler. "The first is the early formative, during which the basic laws of construction are developed. The second, and best, period ensues after the fundamentals have been conquered and more consideration given to refinement and the element of decoration of basic forms.

"The third, or decadent, period arrives when mere technique of mechanical skill engulfs the whole and reduces it to the supermagnificent cleverness of the designer—a show piece that awes but does not create the lasting emotions of the simpler and more vigorous middle period. Thus it is that the Cathedral of Notre Dame, erected in the middle of the Gothic period in France, and not Rheims or Cologne, is regarded as the masterpiece of Gothic.

"In Europe, where labor is cheap, and materials expensive because many of them must be imported, architectural and engineering minds have turned toward the abundant opportunities afforded by reinforced concrete. Here we find the plasticity of the material being developed to its fullest extent by curved wall surfaces, parabolic arches—a structurally ideal form for concrete—by cantilever beams and slabs, and by thin, light, arched ceiling construction of great spans.

"In America, where materials are cheaper, and labor is higher, attention is being centered upon steel, aluminum and their alloys. Here we find a new technique in welding that creates monolithic steel structures rapidly from smaller, easily handled pieces that have been fused into a unit by the expedient of terrific heat applied electrically and readily by workmen. Here also there is more general use of sheet steel for both floor and walls.

"Herein are two fundamental engineering principles, either of which constitutes a strong basis for the formation ultimately of a new style. These principles, together with the many mechanical innovations of the century and scientific advances stressing the value of sunshine, air conditioning, and other factors, are definitely devising a new approach to design. The new style, for the first time will be international rather than sectional. It will not be limited by national boundaries, for, despite armament expansion the world is rapidly becoming more unified and there is an ever increasing exchange of ideas, and, hence, ideals. For this growing unity we may thank the graphic arts, advances in transportation and last, but equally important radio."

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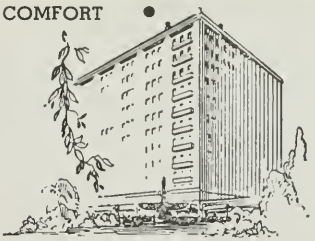

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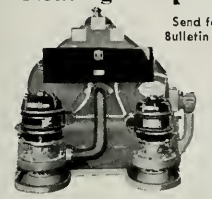

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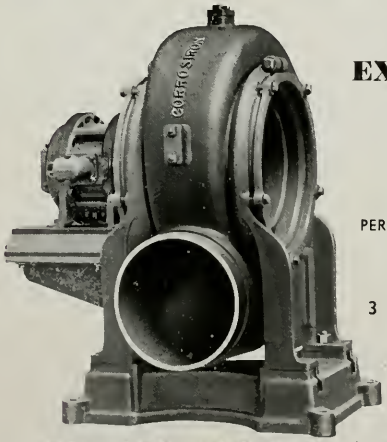

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The ARCHITECT and ENGINEER

JANUARY 1938

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FIREPROOF HOUSES

THE INCREASE in fire-proof construction in residential building is becoming more and more apparent to even the casual observer. Venture a reason or two for this increase.

Let us first paint a picture.

Consider any highway which has an uninterrupted course of about six hundred miles —U. S. Highway 101, for instance, from the Mexican border to San Francisco. Place along this highway, on BOTH sides, houses at intervals of fifty feet. Imagine now that all of these houses are ablaze at one time. A conflagration of impossible dimensions, you say—and yet that picture represents within a mile or two, the yearly residential fire loss in the United States. I will leave it to you to estimate what this means in loss of human lives—and in capital, usually accumulated at a sacrifice, so that a home might be built to house a family.

As always when the American people are confronted with such a picture, unseen forces are set in motion. Without pre-arrangement or contact of any kind, men all over the country begin devising means to change the picture. And, as in the development of steamship, steam-engine, automobile and aeroplane, slowly but surely standards are set up—then improvements and perfections. So it is with the fire-proof house.

Today we are in the midst of these improvements and perfections. The first impulses have created momentum, although as in all change, general interest is slow in the rousing. With national attention focused on the great need for proper and adequate housing and attainment made easier, widespread use of the fire-proof family unit is assured. The Portland Cement Association reports that concrete housing during the last three years has increased steadily, the following figures indicating this increase:

Housing Units With Concrete Structural Walls and Concrete Floors

1935	850 family units
1936	3,163 family units
1937	5,106 family units

Housing Units All Types of Wall Construction with Concrete Floors

1935	850 family units
1936	9,000 family units
1937	12,466 family units

The total number of family units built in the U. S. in 1935-1936-1937 is as follows:

1935	90,000
1936	160,000
1937	190,000

These latter figures are taken from Dodge Reports. The concrete house represents fire-safe or fire-proof construction.

By means of the improvement of placing methods and general simplification of the work, as is done in all major industries, lower costs have been attained, making the fire-proof house available to Mr. and Mrs. Average America at a price they can afford to pay, with the further assurance that their home, as an integral part of its construction, will be free from natural hazards, destructive insects and decay. ARTHUR T. RAITT.

* * *

Architects are wondering if the building industry is slated for another serious set back. It is true the outlook is not overbright but through all the dark clouds that threaten there are indications of some sunshine. The Federal government realizes the importance of keeping the bulding industry alive and to this end President Roosevelt and Congress have approved a housing movement that has for its goal six hundred thousand to eight hundred thousand dwelling units a year for the next five years. At the same time the President has stressed the importance of lowering interest on loans, keeping building material prices down and avoiding unwarranted demands for wage increases.

All of which is working in the right direction and should bring the building industry and business in general out of the doldrums.

* * *

For all the harm that may have come from the present lull in the building industry, that industry, as well as all industry, has, or should have, learned an important lesson from it. The lesson has several chapters, some of which are that the market for the product must be defined; that the product must fit the market; that the product must be properly merchandised; and that industry in general must not freeze its markets, nor its own activities with fear.

If a return to normal business activity is predicated on an adequate scale of residential construction, the effort in that direction must be applied to the proper brackets in which such stimulation will achieve the desired results. In the case at hand there is no question but that the volume building market lies in the field of those persons having annual incomes of $2,400 and less, yet the big merchandising effort has been on houses which can be afforded only by those in higher income brackets.

"Industrial Marketing" cites the fact that in the last few years home-owning prospects have been fascinated by a wave of model furnished homes which in a great many cases at least have been built to achieve an ideal in model home appearance rather than with the thought of appealing to the mass buying market. This practice has been successful in instilling a desire for homes, but at the same time it has been disastrous in establishing an ideal beyond the means of the mass market which is the important market at this time for the industry as a whole.

"Thus," says the writer in "Industrial Marketing," "the building industry, or possibly industry in general which is staking so much on the success of the building industry, is confronted with a job of unselling the effective market on an ideal and reselling it on a practicability. President Roosevelt's plan for lower interest and financing costs will aid in this readjustment as the reductions will permit giving practically ten per cent more house for the money, which will have telling effect on the results desired.

"And if the country as a whole looks to the building industry, and particularly residential construction, to lead it further out of the depths, it must be willing to exert its full force to instill confidence and a spirit of hopefulness in its workers. For wage earners represent the effective market for the type of housing that must be built for the purpose, and so long as the finger of fear is waved in their faces every time they listen to industry speak, and every time they read a newspaper —just that long will the building industry be helpless to effect a normal business situation.

"It is most likely that the present lull in residential building has been instrumental in directing attention to some of the things which have proven to be stumbling blocks to full recovery. It is to be hoped that all industry, as well as the building industry itself, has seen the errors and will cooperate to correct them in the next try."

[Please turn to Page 73]

The age of concrete is here—if the many beautiful concrete houses pictured in this number is any criterion.

So when you design a **reinforced concrete home,** Mr. Architect, remember that all concrete and masonry construction need SURFACE protection to better combat rain, wind, and temperature extremes—dampness and efflorescence, too.

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LAMP COMPETITION

A contest for the design of table and floor lamps, intended to bridge the present gap between plain science and pure beauty, is announced by its joint sponsors, the Illuminating Engineering Society, the American Institute of Architects, and the American Institute of Decorators.

The competition, now in progress, continues till March 15, and is open to architects, interior decorators, industrial designers, and students of architecture and interior decoration. It is not open to employees of lamp and lighting equipment companies.

The purpose of the competition, according to the program issued by its co-sponsors, is "to stimulate improvement in the design of portable lamps by requiring that the essential specifications of the Illuminating Engineering Society as well as the standards of professional designers of interiors be met in products that will reflect the latest scientific as well as esthetic advancement".

Prizes totaling $1,600 (sixteen hundred dollars) will be awarded. There will be four classes, and in each class there will be awarded a first prize of $200 and two honorable mentions of $100 each. The four classes are: 18th Century English, Early American, 18th Century French, and Contemporary Modern.

Complete specifications covering the efficiency requirements of the designs to be entered in the competition have been drawn up by the Illuminating Engineering Society. These specifications are, essentially, those governing present-day lamps of the "Better-Sight" type, which are designed for maximum illumination efficiency, and which, before being permitted to carry the I.E.S. approval tag, are subjected to rigid tests as to specification conformance by the Electrical Testing Laboratories of New York City.

The judges of the competition will be Francis H. Lenygon, president of the American Institute of Decorators; Charles D. Maginnis, president of the American Institute of Architects; and Professor Henry B. Dates, professor of electrical engineering, Case School of Applied Science and president of the Illuminating Engineering Society.

PUBLICLY FINANCED CONSTRUCTION

The volume of public expenditures for construction projects undertaken in November in the 37 Eastern States increased 20 per cent when compared with October and 4 per cent compared with November, 1936. This record, as reported by F. W. Dodge Corporation represents a reversal of the declining trend of publicly-financed construction which has been in effect since last July. On the other hand, privately-financed construction during November declined 15 per cent from the October level which is somewhat more than seasonal. Total contracts including both public and private work amounted to $198,464,600 for November which was 2 per cent below the October total and 5 per cent below November of last year.

Total contracts for the first eleven months of 1937 amounted to $2,703,672,400 as compared with $2,475,600,300 for the corresponding eleven months of 1936, representing a gain of 9 per cent. When segregated by classes of construction, this gain amounted to 17 per cent for residential building, 19 per cent for non-residential building and 38 per cent for public utilities. Construction of public works during this period declined 20 per cent.

BUILDING COSTS MAY NOT DROP MATERIALLY

High costs do not necessarily prevent recovery in building, Albert J. Evers of San Francisco, director of the American Institute of Architects, suggests in his annual report on conditions in the Sierra Nevada District of the Institute, embracing California, Nevada, Arizona, and Hawaii.

"Building costs will probably remain high, and it is during periods of high building costs that the most building has been done," declares Mr. Evers. "Perhaps the pessimism of the last six months is not justified. I believe that the constant harping on the subject of high building costs and labor troubles has had a markedly adverse effect on building volume.

"Over the whole district there is complaint of rising building costs and a slashing of volume, for no apparent reason, since business as a whole in the seven Far Western states seems to have been surprisingly good for the first nine months of last year.

"Volume had been good in the construction industry until the end of September in the entire Western area. In October it took a sudden downward plunge. Whether this is merely a recession or the beginning of a slump no one can definitely predict.

"Wages in the building trades are fairly stabilized for the present, and there is little or no real trouble from strikes since the recent plasterers' strike was settled in the San Francisco Bay area. Due largely to the efforts of a combined group of architects, general contractors and sub-contractors, the building trades have accepted in large part the principle of arbitration with a ban on strikes.

"Organized architecture as represented by the Northern California, Southern California, San Diego, Santa Barbara, and Hawaii Chapters of the Institute, are in a healthful condition. These Chapters are developing splendid cooperation with engineers, contractors, producers and real estate groups, and they are attempting to solve long-standing problems with good chance of success.

"One must confess that, as a whole, future business conditions in the district seem rather uncertain. However, the probability is that if there is an optimistic note in the national scheme of things, an encouragement of business by the Congress, and a better stock market, the building industry and the architectural profession will have a reasonable chance of upturn in volume and value of business and professional work."

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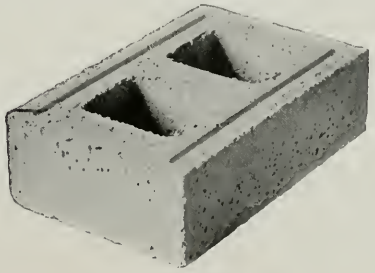

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See story on page ....

BUILDING TRENDS AND NEW DEVICES

PLUG-INS FOR ELECTRIC APPLIANCES

Because many homes are not properly equipped to permit the use of electrical appliances the promise of luxury that stimulated their purchase dies on a dusty shelf. But they and dozens more can be put to work by the simple addition to homes' wiring of more than enough "plug-ins", wherever they happen to be needed.

What women want more than anything else in homes is convenient, neat and safe wiring. For their satisfaction **"Plug-In" Strip,** are now available, a sensational new outlet wiring system which supplies 100 per cent electrical adequacy, both for today and the future.

Simply a continuous self-wired strip which provides outlets or "plug-ins", every six or eighteen inches, there are types of "plug-in" strips designed for installation around baseboards, as chair-rails, or to be inserted inconspicuously flush into plaster walls or wood panelling.

Per outlet, the cost is far lower than any other existing outlet system.

DOUGHNUT-SHAPED BUILDING

A Model building shaped like a doughnut, for the dramatization of the making of bread and cake, will be erected at the New York World's Fair, it is announced.

The baking building, designed by the architectural firm of Skidmore & Owings, John Moss, Associate, will cover an area of 24,466 square feet, of which 5,906 will be devoted to exhibit space. In plan it resembles a huge doughnut, with two horizontal fin-like projections at its sides. The "hole" in the "doughnut" is a circular, grass-sodded garden surrounding a pool, into which a fountain of colored balloons will play.

The front of the building rises in a curved vertical fin 62 feet high at its apex. At the center of this curved surface about four feet above the sidewalk, there will be a window sixty feet long with ten-foot models of "Wonder Bakers", with ruddy, smiling faces, and arms and legs that move in lifelike fashion. On an endless belt, after the manner of a panorama, they are to pass slowly before the sidewalk audience and demonstrate in mechanical pantomime the entire process of making bread, from wheat to hot brown loaf.

FRAMELESS WOODEN HOUSES

Frameless wooden houses to help meet the need for low-cost modern homes are being given final tests by the Forest Service of the U. S. Department of Agriculture.

After nearly two years of investigations, the Forest Products Laboratory of the Forest Service reports that it expects to have plans in the near future for a modern four-room house costing between two and three thousand dollars. Such a "four-room house" includes living room, kitchen and two bedrooms, a bath, and a utility room, kitchen equipment with an electric refrigerator, bathroom fixtures, plumbing, heating plant and electrical wiring.

"Such a frameless or pre-fabricated wooden house can be put up in a few days on the building spot selected," said George W. Trayer, Chief of the Division of Forest Products Research. "The house can be one or two-story, have a flat or pitched roof and yet may be built without beams, studding, stringers or rafters. It may be set over a cellar or on another foundation. Delivery should be as rapid as for a modern automobile."

The new frameless house is constructed of pre-fabricated plywood panels.

CREOSOTED PILES DEFY BORERS

Photograph shows removal of piles at Pier 19, San Francisco waterfront, October 26, 1937, to make room for new pier. Note excellent condition of piles after service of 23 years. The piles were originally treated with West Coast Wood Preserving Company's creosote, represented in San Francisco by J. H. Baxter Company.

FOR Better Homes

Concrete home at Palm Springs, Calif. Leland F. Fuller, architect, Santa Monica

the price of non-firesafe construction.

Lower insurance rates, freedom from repair and maintenance bills and slower depreciation result in a saving equivalent to eliminating a "hidden mortgage" of hundreds of dollars. It *costs less per month to live in a firesafe concrete house.*

What concrete means to YOU

To *architects:* Concrete offers a virtually unexplored new medium of design.

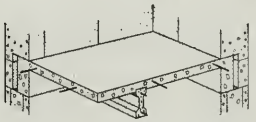
To *builders:* It is the "something new" home buyers are looking for—a cue for that new demonstration home!

To *realtors:* Concrete exemplifies the high construction standard and sound values on which you are building new business futures today.

To *finance agencies:* Here is the answer to the challenging problems of twenty-year mortgages—low depreciation, high resale value.

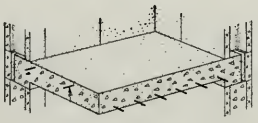
To *Mr. and Mrs. home buyer:* Concrete construction has advanced so fast that not all builders are "up" on the latest methods. But, in or near your community, are reliable builders and architects experienced in concrete. Ask any reliable local concrete man for information. By all means, before you build any type of home, have it estimated with firesafe concrete walls and floors.

TYPES OF CONCRETE FLOORS



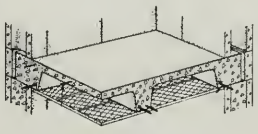
PRECAST CONCRETE JOISTS

Factory-made joists of reinforced concrete support a concrete slab in this type of firesafe floor construction. Joists may be covered or left exposed and painted to make attractive beamed ceiling.



SOLID SLAB CONCRETE

Reinforced slab of uniform thickness.



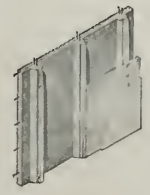
RIBBED CONCRETE

Ribs cast integrally with the slab.

REINFORCED CONCRETE WALLS

SOLID

Insulation applied to interior surface either over furring strips as illustrated, or direct. The exterior surface is the finished wall. (Walls sometimes built hollow-double with air space between.)



RIBBED

Rigid insulation is applied to the face of the ribs as a plaster base — or lath and plaster may be used with insulation placed between the ribs.

MAIL COUPON FOR FREE FACTS

PORTLAND CEMENT ASSOCIATION

Dept. N 11-6, 564 Market St., San Francisco, Cal.
Dept. I 11-8, 816 W. Fifth St. Los Angeles, Cal.
Dept. O 11-2, 903 Seaboard Bldg., Seattle, Wash.

Please send booklet *"Designed for Concrete"* showing 55 concrete homes and discussing details and advantages of concrete construction.

☐ Architect ☐ Builder ☐ Realtor
☐ Financial Agency ☐ Home Buyer

Name .....

Address .....

PULSE OF THE READER

APPRECIATION

Dear Editor:

During the last year you were more than good to the Structural Engineers Association. You were exceedingly generous with your valued publication, The Architect and Engineer. The Structural Engineers are appreciative of your kindness and request that I thank you.

With this letter we are sending your publication our earnest wish for every possible success in the new year—for long life, for increases in subscriptions and advertisements, and for increases on the right side of the ledger.

For members of the staff of The Architect and Engineer and their families, greetings.

Sincerely,

WILLIAM H. POPERT,

Chairman, Publicity Committee.

San Francisco, Dec. 20, 1937.

UNETHICAL

Dear Editor:

An acquaintance mailed me the following clipping from the monthly bulletin of the Illinois Society of Architects, anent the "Specification Cover" Evil. By Evil I mean the practice of some architects (and I don't exclude Californians) in sponsoring the printing of specification covers whose inside pages are filled with trade advertisements. The money received from these ads goes to the promoter, of course, while the architect gets his covers for nothing. The promoter assures the advertiser his products will be used by the architect which may or may not be the truth. Here's what Elmer Jensen, President of the Illinois Society of Architects, thinks of the racket:

"A matter has come to my attention about which I believe the members of the Society should be advised. A concern in Chicago prepares specification covers for the use of architects. These covers are given to architects gratis.

"The covers contain advertisements of contractors, material and equipment dealers, and manufacturers. The use of these covers by architects would, in my opinion, appear in very bad taste and might be considered very unethical.

"Their use certainly does not add to the dignity of the profession. The literature and correspondence which, I am told, is used in securing these paid advertisements makes the use of the covers doubly reprehensive. The following quotations make this clear:

"'As they will no doubt be used as a directory by him to call in contractors to figure work in the future, we are calling on only a few firms whom he has selected as being satisfactory for representation. Part of the money which accrues from advertising space will be used to pay for printed stationery, signs, and office supplies for his office, which is usually considered necessary to secure new work.' (The "his" obviously means the architect's.)

"Any architect who uses these covers is theoretically getting something for nothing. Actually, he is placing himself under obligations which may not be a financial burden to him but may, under the circumstances, be considered a cost which the owner will pay.

"It seems inconceivable that there are architects who will stoop to such petty and unethical means of saving a paltry sum of money."

What about our California architects who are guilty of this unprofessional conduct?

ETHICAL.

Oakland, Dec. 23, '37.

LOW COST HOMES

Dear Editor:

In the wonderful advance of Divine Providence, our President is appealing for the building of great numbers of houses, sorely needed, for less cost than we have built homes for in the past. Many want to build but as yet have been unable to finance a house to meet their needs.

Here is my list of ideas that may help to solve the very moderate price house problem:

The chief factor of cost is area or VOLUME of space enclosed.

Where this can be reduced, cost will be MUCH LESS.

Studious PLANNING can accomplish much and still provide more comfort and genuine satisfaction than many people realize.

The popularity of "trailer homes" is an extreme illustration of this.

Apartment plans come between.

Many can learn to live very well in reduced space, for the sake of a new home, and still keep pace with the modern standard of living.

Now consider these things—Reduce area by DOUBLE USE OF ROOMS, such as—Kitchen with dining nook (I like to put dish cupboard BETWEEN sink and dining table, open both sides)—or eat in living room.

Living room with wall bed and screens (there are an endless number of styles to fit one's needs, for example: bed folding into a closet, one standing up by itself in any place wanted and let down for sleeping, a low one to roll under bath room floor, one under a revolving hood in outer wall, a davenport, or a two story bunk).

Plan a room or more to defer and build later.

Use attached garage for laundry work, etc. and some storage, also as a play room when auto is out.

Omit basement and space under house; build floor directly on levelled ground of water-proofed concrete.

Omit brick chimney and fire place: use asbestos pipe for flues. (Open flame gas or electric heater is better any way.)

Bath room, small hall and some closets can be made lower in ceiling height, then the space above up to roof can be used for storage or for heating chamber.

Roofs can be of low pitch or flat, even level. A tight level roof does not leak from rain. A level roof may become the floor of a second story later on.

All such things reduce the volume of house to build, hence cut the cost; They also reduce time of house work, IF PLANNED for convenience.

Of course we then have less floor space for children to play in, or to entertain visitors, or to spread out our feelings. But these can be provided in other ways for less cost and of better quality and suitability.

There is more space on the lot for terrace, or lawn or play yard or garden. Then we have public playgrounds, church and social doings and hotels for parties.

Privacy in the home is helped by screens or curtains, easily adjusted.

The above reductions do not lower the rates for labor and materials which would reduce buying power and impair the important national market for goods. They do tend, however, to increase the number of fairly good homes that can be built, thereby creating increased demand for building materials.

Now another set of economies can result from building walls of vertical boards like early California practice—but improved. Brace outside with hoop iron (say 3/16" x 2") diagonal, in TENSION, secured with hammer screws.

Cover outside with water tight paper, chicken wire and stucco (gunite sprayed on) and spray painted. Inside may show the planed wood—more beautiful for years than with any coating. Cover joints with ¾" strips of gummed paper or tape. Place boards alternate wide and narrow (6" and 10") for better design.

Use few studs, none at corners. Girts at window sills and perhaps at heads, left showing. In some rooms if needed, cover boards with choice wall boarding.

[Please turn to Page 72]

HARD MAPLE
Tells its Own Story!

This photograph shows **MFMA** *Northern Hard Maple Flooring—2¼" face width*

Even in a photograph, you can see the remarkably fine, smooth grain, the toughness and tightness of Hard Maple's fibres. You can almost *feel* the velvet-smoothness of its surface. Your mind's eye will tell you that only the hardest of hardwoods can possess this clear-cut, enduring beauty.

With such toughness and close graining, you know Hard Maple offers unequalled resistance to abrasion—will not sliver, splinter, or develop ridges, even under heaviest industrial use—yet it is resilient, warm, dry and comfortable. Its lasting smoothness offers no lodging places for dirt, makes Maple remarkably sanitary—it creates no dust, is kept clean by brushing alone.

Northern Hard Maple can be laid in many different patterns and finished to match any decorative scheme. Combining all these features, it is easy to see why *this* is the most versatile of all flooring materials—why today it is unequalled in meeting the diversified needs of countless factories, mills, bakeries, warehouses, stores, ballrooms, schools, and homes alike. Before building or remodeling, investigate this superior flooring. Consult your architect about **MFMA*** Northern Hard Maple, available in strips or blocks. It's **MFMA** supervised.

MAPLE FLOORING MANUFACTURERS ASSOCIATION
1790 McCormick Building, Chicago, Illinois

See our catalog data in Sweet's, Sec. 11/76.
Our service and research department will gladly assist you with your flooring problems. Write us.

Floor with MFMA Maple

NORTHERN HARD

***MFMA**—This trademark on Maple Flooring guarantees that it conforms to the exacting grade standards of the Maple Flooring Manufacturers Association. It protects you against species substitution and inferior grade. It assures you of *genuine* Northern Hard Maple. Look for it on the flooring you buy.

BASALITE

A simplified prefabricated unit system of light-weight insulating reinforced concrete.

Before you decide on the material of which you are to build your home, check and see if it has all the necessary qualities demanded in modern construction.

Is it fireproof and permanent?

Can it be completely reinforced in a simple way?

Does it provide an easy and practical way for the installation of plumbing and wiring?

Is it insulating against heat, cold and sound?

Does it have perfect nailing qualities?

Has it unlimited decorative possibilities?

Does it give you warm, dry, rigid floors, free from sagging and squeaking?

Is it positively termite and rot-proof?

Does it give you complete freedom of architectural design?

Are the insurance and upkeep costs low?

Are all the above qualities combined in one material?

Does it exemplify the highest construction standards and yet be economical enough to be used in the most modest cottage?

Whatever you are planning to build, you owe it to yourself to personally investigate Basalite and find out that you can write "YES" in answer to every one of these questions. Basalite products are a complete line of prefabricated, light-weight, concrete building materials. These products include, virtually, every necessary part of the average building. Basalite is now being used all over central and northern California in building homes, stores, apartments, factories, etc. Because of its light weight, it may be economically shipped anywhere in California.

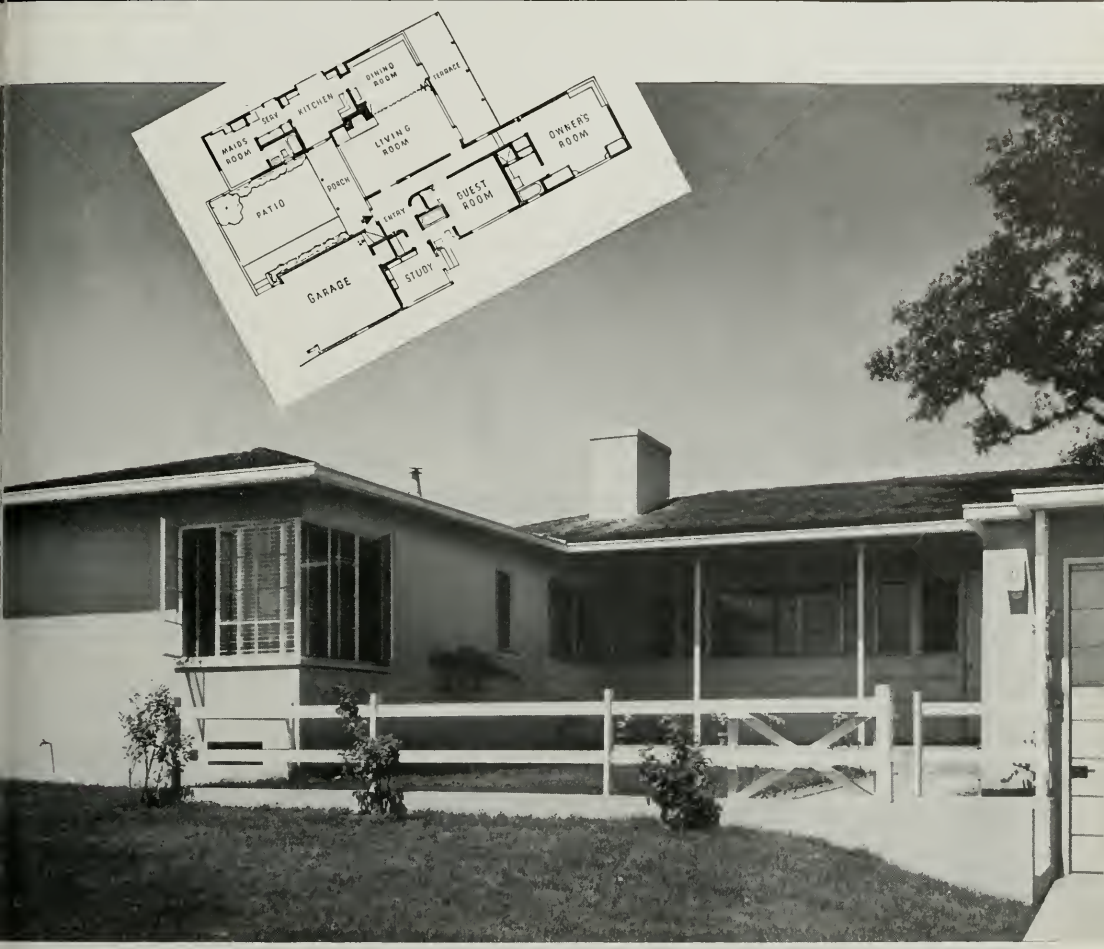
Basalite is manufactured in a new and modern plant under scientific control, using modern machines of the latest design.

BASALT ROCK COMPANY, INC., NAPA, CALIFORNIA

Manufacturers and Distributors

Rambling design

HEAT PROBLEM SOLVED WITH GAS



l small home was one of several California designs chosen tion-wide contest, for publication in "House & Garden."

☆ Architects *Erle Webster* and *Adrian Wilson* achieved a happy combination in this interesting home for *Mr. and Mrs. Horace N. Gilbert, Pasadena.* ☆ The design affords a feeling of "openness," with privacy, on a 64-ft. lot. Yet, despite the separation of wings, and intervening patio, uniform heating is assured in all rooms by a forced-air, gas-fired heating unit, automatically controlled. ☆ There's a gas range, of course, and automatic gas water heater; even a gas lighter for wood fires in the fireplace. ☆ According to the architects, the owner originally considered other appliances, but *"changed to all-gas at a considerable saving in cost."* This suggests a practical answer to your client who wants to put more money into other features without increasing his total investment: *quick, clean, dependable, economical gas appliances throughout.*

GAS

THE MODERN FUEL

HEATING • COOKING • HOT WATER • REFRIGERATION

ENTRANCE DETAIL, CONCRETE MASONRY RESIDENCE OF MR. AND MRS R. J. PRINGLE
BEL-AIR, CALIFORNIA
H. ROY KELLEY, ARCHITECT

This house was recently purchased by Bob Burns, Radio Comedian

CONCRETE HOUSES

By AMOS H. POTTS

District Manager

Portland Cement Association

UP TO the time when man began to reason, the selection of shelter for the family group was probably entirely accidental. The primitive inhabitants of some regions occupied caves because caves were available. In other sections boughs and reeds afforded crude shelter. And for many centuries after man became selective in the matter of the family dwelling, the kind of house he occupied was dictated largely by the sort of material available and secondarily by the kind of shelter which had become traditional with the racial group.

It is reasonable to assume that the people whose ancestors had found safe shelter in caves, were among the first to build houses of stone. The descendants of the people who had fashioned huts of bough and thatch, graduated to dwellings of timber. And then natural laws began to influence housing.

Climate and temperature had to be considered. Wind and weather were foes of flimsy construction. Earthquakes were a determining factor in housing in some parts of the world for centuries. Not until the present century did man learn to build structures resistant to earthquakes. Flimsy houses have long been traditional in some areas subject to frequent earthquakes because they are easily rebuilt after being shaken down and less likely to crush occupants when quakes come without warning.

CONCRETE FOR FIREPROOF BUILDINGS

Similarly man was slow to devise means of protecting his home against destruction by fire. Not until concrete came into general use as a building material were men able to build large structures which were wholly fire-resistant. Even then, for a long time fireproofing was thought to be too costly for common application to homes.

In this country, in a few centuries, housing has passed through practically all the stages common to mankind since prehistoric times. America had its cave people, its cliff dwellers, and its villages of bough and thatch.

The earliest white settlers built houses of whatever material was most easily available. Log houses became a national symbol. Prairie dwellers lived in sod houses. In the southwest and on the Pacific Coast, adobe dwellings were common. But in general, wood houses were traditional in America, and the men who have pioneered in concrete construction had tradition to overcome. This in spite of repeated lessons in the form of destructive fires sweeping whole cities; tornadoes leveling dwellings in wide areas, and earthquakes devastating populous communities.

THE BEGINNING OF CONCRETE HOUSES

In less than a century, the application of concrete to house construction has gone through three distinct phases in the United States. The first phase began about the middle of the nineteenth century with the building of a few notable concrete houses by wealthy men who wanted dwellings that would be firesafe, permanent and offer broader possibilities for individual architectural treatment than the more common masonry materials. The first instance of this kind of which there is a definite record, was in Milton, Wisconsin, where in 1845, Joseph Goodrich built a concrete resi-

Exterior Elevat
and Swimming
Residence for
Mr. and Mrs.
R. J. Pringle,
Bel-Air, Califor

Photos by Dapprich

RESIDENCE FOR

MR. AND MRS. R. J. PRINGLE,

BEL-AIR, CALIFORNIA

H. Roy Kelley, Architect

Katherine Bashford
Landscape Architect

dence and a hotel, known as the Milton House. The latter is still in good condition and is now occupied by a printing establishment.

About 1852, Horace Greeley, famous editor, built a large concrete barn on his estate at Chappaqua, New York. The walls were two feet thick and the exterior was finished with stucco. Some years later, the residence and other buildings on the Greeley estate were destroyed by fire. The sturdy concrete barn was then remodeled as a residence and is still one of the show places of that section.

About 1856, Joshua Silvester, an American shoe manufacturer, built what he called a "cement house" in Danvers, Massachusetts. Five years later, a neighbor, Israel Putnam, built a similar house. Both residences are still in excellent condition after more than three-quarters of a century of resistance to New England winters.

Another notable concrete building of the "fifties" was the Allen House, a hotel in Honesdale, Pennsylvania, built about 1857. This three-story building is still structurally sound although outmoded for hotel use.

Two concrete residences built in 1871 and 1872 by J. V. Farwell, at Lake Forest, Illinois, were show places in this noted suburb of Chicago, for many years.

About the same time, W. E. Ward, a mechanical engineer, built a large concrete residence at Port Chester, New York. The entire house, including walls, partitions, floors, roof, stairs, porches and porch columns, towers, balconies, bay windows and cornices were of concrete. The exterior walls are of unreinforced concrete two feet thick, including a ten inch air space for insulation. Floor slabs are three inches thick, reinforced. Ceilings are two inches of concrete. Members of the family of the original owner still occupy the house which is in practically as good condition as when it was first completed.

FIRST AMERICAN MADE PORTLAND CEMENT IN 1872

The residences which have been previously described were all the more notable because the concrete of which they were built was made with cement imported from Europe. It was not until 1872 that any Portland cement was made in this country. An early use of concrete in housing was by David O. Saylor, the first American cement manufacturer. He built a group of terrace-type concrete houses at Allentown, Pennsylvania, about 1880, to solve the housing problem for his mill employees. The houses are still intact and have required practically no expense for maintenance.

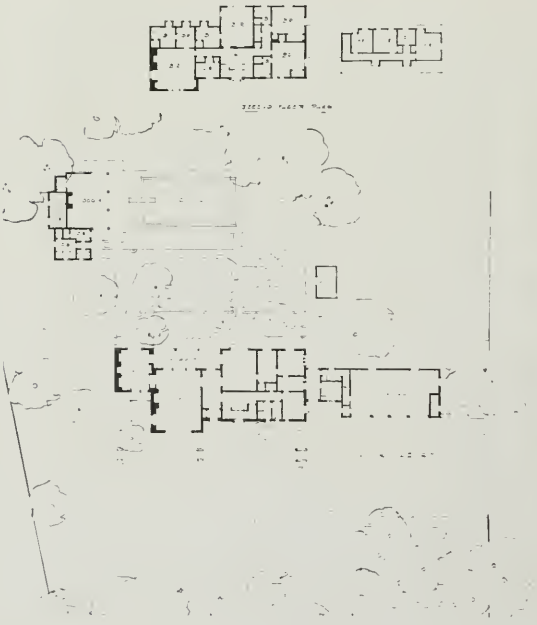
Saylor's experiment in solving a housing problem with concrete houses, influenced the second phase of concrete house development in the United States. This development came as the cement industry in the United States grew and the American made product began to exceed the volume of imported cement. Concrete was seized upon as the answer to low-cost, firesafe and maintenance-free houses for industrial communities.

THE BEGINNING OF MASS CONSTRUCTION

Large industrial corporations noted the success of the Saylor experiment at Allentown and saw the opportunity to apply mass production methods to effect substantial savings in building large numbers of houses at once. Builders, too, sensed the possibilities in this new structural material and scores of projects got under way early in the twentieth century, for building concrete dwellings on a quantity basis. Most of these projects were successful in that they accomplished what the builders intended, that is, providing low-cost dwellings which would be firesafe, sanitary and require very little expense for upkeep.

In 1907, the inventive genius of Thomas A. Edison was turned toward the possibility of devising ways of building concrete houses for which all the concrete for walls and floors could be placed in one day. His idea was to provide cast iron molds which could be used over and over again, so that it would be economical to build large numbers of houses at the same time. His experiments were never completely successful.

LOGGIA, RESIDENCE FOR MR. AND MRS. R. J. PRINGLE, BEL-AIR



PLANS, RESIDENCE FOR MR. AND MRS. R. J. PRINGLE, BEL-AIR, CALIFORNIA

Designed by H. Roy Kelley, Architect, of Los Angele who has won more house competitions than any othe American architect, the beautiful Pringle home a tracted the admiration of Bob Burns, radio star, th present owner. The house is built of concrete masonry

Now the Home of Bob Burns

DETAIL OF LIVING ROOM, RESIDENCE FOR MR. AND MRS. R. J. PRINGLE, BEL-AIR, CALIFORNIA

The third phase, and the most recent, in the development of concrete houses in this country came with the general recognition of the unlimited design possibilities of concrete. Until 25 or 30 years ago, there had been only a few outstanding instances of the application of concrete to house construction for anything but a purely structural material. These few outstanding instances perhaps contributed much to the design developments since. But in general, strength, permanence and economy made concrete so desirable for foundations, frames, floors, fireproofing and for bonding other materials that its own possibilities as an exposed decorative material were overlooked.

CONCRETE BECOMES AN ARCHITECTURAL MEDIUM

Now concrete—the structural material—has become an architectural medium. No longer is it hidden beneath veneers of other materials. Architects and contractors have learned how to express charm and beauty, brilliance and dignity in exposed concrete. Early in this cen-

TWO INTERESTING INTERIORS OF THE PRINGLE-BURNS RESIDENCE, BEL-AIR, CALIFORNIA

REINFORCED CONCRETE HOUSE FOR RICHARD HALLIBURTON, LAGUNA BEACH, CALIFORNIA

ALEXANDER LEVY, DESIGNER AND BUILDER

tury, a new generation of architects sought to escape from tradition and evolve new forms in houses to more nearly meet rapidly changing conditions of living. They found concrete—the plastic—could be readily and effectively adapted to their new concepts of functional design in dwellings. And more—they found that concrete was as adaptable to old forms as it was characteristic of the new. Its only limitations are the imagination and skill of the architect.

Architects, engineers and contractors on the Pacific Coast made a major contribution to this forward step in house design. Many of the precepts which they first applied to monumental architectural structures, were seized by house designers and applied to create new effects which enhanced the beauty and increased the livability of small homes.

Concrete enabled house builders to get away from custom-dictated styles where such variation was desirable, but to conform to necessities of climate and local demand as well if need be. For example, concrete is applied to the building of an authentic Monterey hacienda, or a typical Cape Cod cottage with equal facility.

Some parts of the country have accepted the ultra modern flat-roofed type of house design because it lends itself so well to the small lot by substituting a roof deck for the traditional porch. In other sections the traditional pitched roof is demanded for a number of sound reasons. Either type of dwelling can be executed in concrete with complete satisfaction to the owner and his pocketbook. The result in either instance is a house which will be firesafe, proof against destructive termites and will have a very low rate of depreciation.

In addition to the advantages of firesafety, economy and durability, concrete houses have had a particular appeal to home owners on the Pacific Coast because of their great regidity and resistance to earthquake damage.

Not the least of the desirable characteristics of concrete for residence construction is the ease with which any desired texture or color may be obtained for either exterior or interior walls. Ornamentation may be cast integrally with the walls or applied after the forms are stripped. Colors too, may be similarly applied.

DETAIL, HOUSE FOR RICHARD HALLIBURTON, LAGUNA BEACH, CALIFORNIA

GROWING POPULARITY OF CONCRETE HOUSES

Concrete houses are on the increase in the United States. Some 61 per cent more were built in ten months of 1937 than in the same period of 1936. In the vicinity of Los Angeles alone during the past twelve months, it is estimated that 500 concrete houses have been built. Outstanding examples of some of these accompany this article. Nearly 20,000 houses with concrete walls were built in the United States this year.

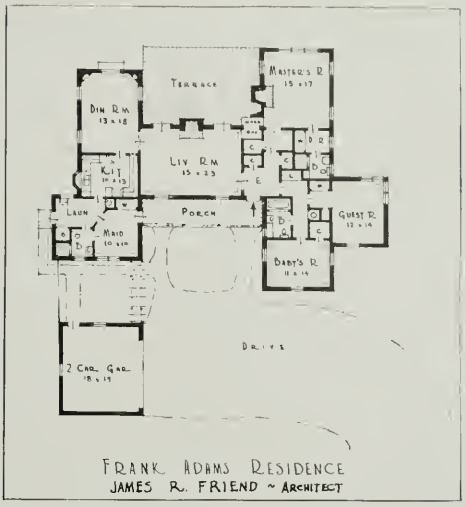
With this trend toward all concrete construction there has also come an increased acceptance of concrete first floors in houses of other material. Prime considerations are the fact that concrete floors for residences are fire-resistant and immune to the ravages of termites. Such floors are not subject to shrinkage; there is no settlement of the walls or partitions they carry, and no cracked plaster and out-of-square door and window frames. The absence of vibration and squeaks, and the fact that concrete floors form an effective barrier against the passage of odors, smoke and dust, are other advantages.

With the comparatively recent development of precast concrete joists, light enough to be

TWO PHOTOS AND ARCHITECT'S SKETCH OF REINFORCED CONCRETE HOUSE FOR MR. AND MRS. FRANK ADAMS, PALOS VERDES, CALIFORNIA
James R. Friend, Architect

handled and set by two men without hoisting equipment, costs of concrete floors have been reduced to a point comparable with the cost of less permanent floors.

There are prophecies that more efficient use of forms and new economies in the construction of concrete homes will obviate efforts to develop economical prefabricated houses. Many close students of housing trends believe that there will be a decided swing toward individually designed homes built economically. In a reinforced concrete house, the walls, floors and all structural parts are formed as one integral unit. The modern concrete contractor maintains efficient portable equipment with power machinery and trained workmen. The competent concrete house specialist operates on a smaller scale than the builders of large commercial structures, but he applies many of the same efficient methods to produce the effect desired by the architect—livability and style that will not become obsolete in a lifetime.



PLAN, RESIDENCE OF FRANK ADAMS, PALOS VERDES, CALIFORNIA
James R. Friend, Architect

LIVING ROOM, RANCH HOUSE FOR MR. AND MRS. FRANK ADAMS, PALOS VERDES, CALIFORNIA
James R. Friend, Architect

REINFORCED CONCRETE HOUSE FOR JOHN D. GREGG, ARCADIA, CALIFORNIA
GARRETT VAN PELT, ARCHITECT

Photo by Mott Studios

ANOTHER VIEW, REINFORCED CONCRETE HOUSE OF JOHN D. GREGG, ARCADIA
GARRETT VAN PELT, ARCHITECT

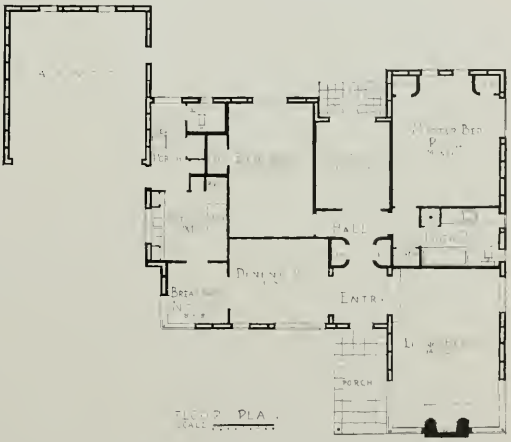
Photo by Miles Berne

MODEL CONCRETE HOUSE, HOLLYWOOD, CALIFORNIA
THEODORE JACOBS, ARCHITECT

SYSTEMS

for reinforced concrete house construction

ALL the systems here described for placing concrete have been used in the construction of one or more of the Southern California houses illustrated in this issue, except the Tracie system, which is used in Northern California.



PLAN OF MODEL HOUSE, HOLLYWOOD CALIFORNIA

McKEE SYSTEM

The wall obtained with this system is a double wall. It is achieved by successive lifts of eighteen inches. The form is a wood panel inside and outside, lined on the wall face with boards or plywood. The internal collapsible form is of heavy guage galvanized iron. The whole is held in place by patented clamps which extend from the bottom of the form on the inside, over the top and down to the bottom of the form on the outside. The outer and inner concrete shells are two and one-half inches thick, the over-all dimension of the wall varying from eight to twelve inches. The corners of the wall are solid, as are the window and door jambs. The two shells are held together with steel ties and reinforced horizontally and vertically.

HAYES SYSTEM

The wall obtained with this system is hollow. The forms used are steel panels, full wall height, and of varying widths. The hollow space is formed with a full height steel collapsible core, spaced so as to leave a connection between outer and inner shells every twenty-four inches. The concrete shells are approximately two inches thick and are reinforced with electrically welded wire fabric. The webs are reinforced with two vertical steel bars. The total wall thickness is ten inches. In the ultimate development of this system all form placing, pouring and

Photo by Dapprich

"SOUTHRIDGE," HOLLOW WALL CONCRETE RESIDENCE OF MR. AND MRS. PHILIP ILSLEY, BRENTWOOD HIGHLANDS, CALIFORNIA

JOHN BYERS, ARCHITECT; EDLA MUIR, ASSOCIATE

Photo by Mott Studios

A PHYSICIAN'S HOUSE OF CONCRETE MASONRY, LOS ANGELES, CALIFORNIA
HETH WHARTON, ARCHITECT

stripping will be done with a light crane, operated from a truck, which will also contain the concrete mixer. All partitions in the houses built with this system are of concrete, two to four inches in thickness, solid. The wall surfaces left by these forms are sufficiently smooth that plaster may be entirely eliminated, inside and out.

GUN-RIB SYSTEM

The wall obtained with this system is a rib wall, formed by the placing of permanent cores made of plaster board spaced to form the ribs. The cores are like boxes, open top and bottom and are made at the site. The rib is reinforced with two vertical bars. The reinforcing of the outer shell is composed of pencil rods, twelve inches on centers. Over the rods is placed expanded metal generally used in gunite. The permanent cores are held in place by temporary board backing and the ribs and outer shell are completely shot with gunite. After the removal of the backing, the interior face is plastered directly on the permanent plaster board cores, which thereby perform the double function of form and plaster base. The total wall thickness varies from six to eight inches, the outer shell being one and one-half to two inches in thickness, depending on wall height.

DETAIL OF A PHYSICIAN'S HOUSE, LOS ANGELES
HETH WHARTON, ARCHITECT

REINFORCED CONCRETE HOUSE AT PALM SPRINGS, CALIFORNIA
STEPHEN H. WILLARD, ARCHITECT

ANOTHER VIEW OF HOUSE IN PALM SPRINGS, CALIFORNIA
STEPHEN H. WILLARD, ARCHITECT

Photo by Mott Studios

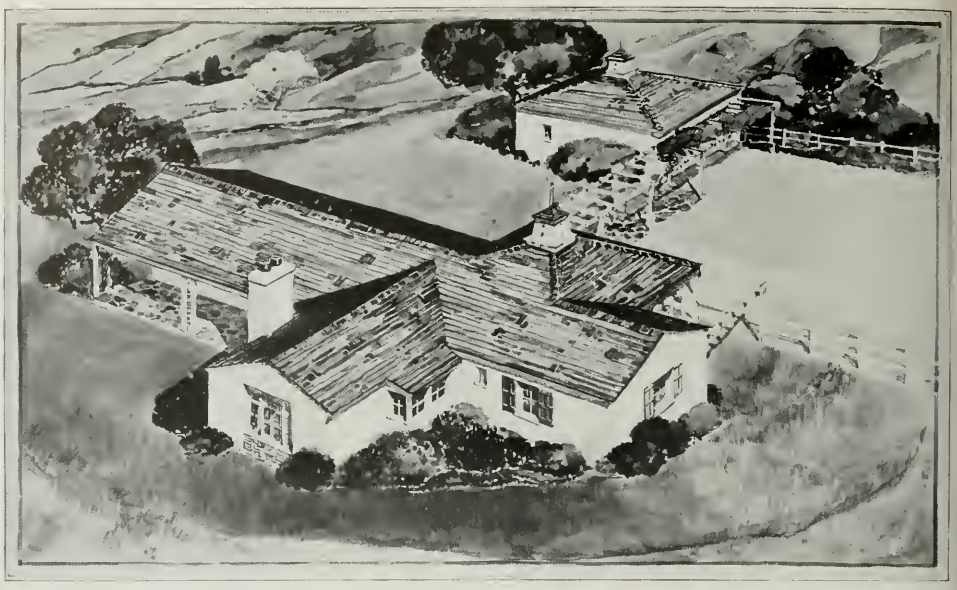
HOUSE OF SEFTON MILLER, LOS ANGELES COUNTY
CHARLES O. MATCHAM, ARCHITECT

McCOLLUM SYSTEM This system is very similar to the McKee system except that the forms are all steel and the lift is two feet instead of eighteen inches. This wall is a true hollow double wall in that at no point is there a connection of concrete between the outer and inner shells.

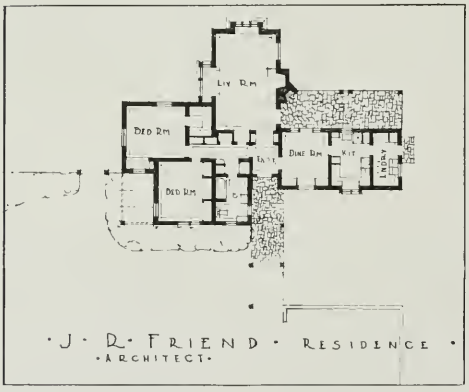
FABRICRETE SYSTEM This system is also a Gunite rib wall but the forming is done with a steel A frame covered with reinforced paper, forming the inside face of ribs and panels. The inside plaster is applied to metal lath, insulation or plaster board, fastened to the ribs.

SIMPLEX SYSTEM This system can be used for either a rib or solid poured wall, the solid wall method being now used more generally. The forms are of steel panels of varying widths and twenty-four to forty-eight inches in height. The panels are staggered when placing, both inside and out, and are held fast with a special spreader, clamp and bolt combination. The

LIVING ROOM, HOUSE OF SEFTON MILLER
CHARLES O. MATCHAM, ARCHITECT



REINFORCED CONCRETE HOUSE FOR MR. AND MRS. JAMES R. FRIEND, ROLLING HILLS, CALIFORNIA
JAMES R. FRIEND, ARCHITECT



wall thickness may be varied, but in houses recently erected, walls have been six inches thick with reinforcing bars in the center of the wall, placed both ways. The inside face of this wall is finished with insulation board and plastered, or the whole wall may be poured with lightweight aggregate to provide insulation.

SPEEDFORM SYSTEM The Troiel Metal "Speedform" System, which provides a reinforced single wall of any width or a reinforced double wall with a 1" waterproofing and insulating material plus a 1" air space between, and tied together with metal straps appropriately punched and spaced, which straps also serve to hold the panels (2' high and up to 8' long) and the reinforcing steel in place. Base molds, windows, doors and other openings are made complete, with trim, by using appropriate metal forms locked up with the panels.

DEICHMANN SYSTEM This is a ribbed wall made ceiling high in sections up to 12' and 14' long at the job site on concrete floor or platforms, and then raised into place after curing, and connected with poured concrete joints.

MERRILL SYSTEM Makes use of semi-circular asbestos pipe covers, nailed vertically at 12" centers to 2" nailing strips, as the inside form for a monolithic wall. Hot air is circulated through the spaces these covers provide to heat the house.

OTHER SYSTEMS There are a number of other excellent systems operating with success and which are a credit to the genius of the inventors. Several of them are important factors in the answer which concrete has to the low cost housing problem.

The field of reinforced concrete masonry is rapidly growing and the walls erected of the units of the several manufacturers are not only capable of a wide range of expression, but they are also in some cases the only solution acceptable to many architects and owners. Reinforced as these walls usually are and should be, they give great beauty with stability.

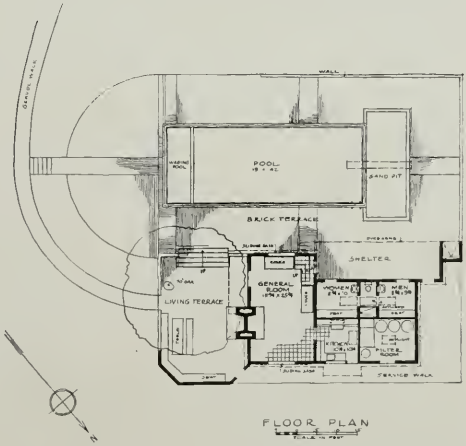
A RECREATION BUILDING AND POOL AT ORINDA, CALIFORNIA

W. W. WURSTER, ARCHITECT

SWIMMING POOL ADJOINING RECREATION BUILDING FOR MR. AND MRS. FREDERIC C. BENNER, ORINDA, CALIFORNIA
William Wilson Wurster, Architect

ONE of the significant advances of 20th century civilization in America is the general recognition of recreation as a necessity. Coincident with the development of the means of production and transportation that has made possible reduction of working hours for all of us there has been an increase in the pace of life that makes a certain amount of relaxation a positive need for the maintenance of health and sanity.

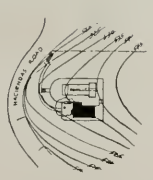
Architecturally this problem has found its chief expression in the summer house and week-end cottage; the recreation center designed by W. W. Wurster for the F. C. Benner family is still another solution. This charming building is intended as a place to go for the day or evening to rest, play or entertain. A half hour's



FLOOR PLAN

A RECREATION BUILDING & POOL FOR MR. & MRS. FREDERIC C. BENNER ORINDA CALIFORNIA

WILLIAM WILSON WURSTER ARCHITECT



PLOT PLAN DIAGRAMMATIC

drive over good roads from the owner's town house, it is a retreat that can always be ready for us without bother of setting up housekeeping. Many a home owner has found that one dwelling provides worries enough; and that another home only complicates life and does not give enough opportunity for rest to compensate for its additional care.

On a gentle southerly slope dotted with live oaks and overlooking a beautiful little valley in the Contra Costa hills, well away from any much traveled highway and yet not far from a main arterial, near a delightful golf course but not too near a country club, the site is quite ideal. Brush fires are something of a hazard during the summer as they are to all buildings in California's dry countryside, which was one of the reasons for the use of the flat gravelled roof and for the selection of concrete as a wall material.

The accommodations consist of a lounge and small kitchen, a porch, a swimming pool with dressing rooms and filter plant and a walled court with outdoor fire place and a fine old oak tree. There are no sleeping quarters; nothing to encourage staying for a few days.

As in so much of his recent work, Mr. Wurster has again achieved a charming design in a modern mode to which no one can reasonably offer serious criticism. There is none of the overworked zig-zag ornament; no mechanically repeated motifs—different in form but just as stupid as the machine made acanthus leaves and egg-and-dart mouldings of decadent classicism. There is no frantic effort to replace walls with steel and glass just to obtain novel effects; no twisting of rooms out of shape just to be different; none of the cocktail lounge atmosphere that makes a travesty of so many modern domestic interiors. A good mass well studied as to its entourage; nicely spaced openings of reasonable size; a straight forward idiomatic use of materials—these are the architect's means of expression.

The walls of the building are of precast reinforced concrete units tied together vertically with reinforced studs and horizontally by reinforced bond beams poured in place. The dove-tailed shaped studs which unite the wall find their natural expression in the continuity of the vertical joint; the wall is not a stone-masonry wall and the normal broken joint stereometry is not to be expected. The retaining wall which forms two sides of the swimming pool court is also of reinforced units with counterforts engaging the dove-tailed lugs on the back of the units.

The floor of the lounge is of hollow partition tile laid on concrete, the air spaces reducing the possibility of dampness. The roof of the building is timber framed covered with asphalt and gravel. The swimming pool itself is of monolithic concrete finished with white cement; the paving around it of brick laid in sand.

PUBLIC DEMANDS BETTER HOMES

THE trend in home building is toward better and more durable houses. Past experience with shoddy construction has taught the public to demand houses that last and can be maintained at little cost. With the advent of long-term loans, financing organizations are also insisting on better construction. By better construction is meant:—

1. **Good design.**
2. **Rigidity.**
   a. **Walls stay straight, plumb and tight.**
   b. **Floors stay level and squeakless.**
   c. **Partitions do not settle.**
   d. **Plaster cracks are reduced to a minimum.**
   e. **Door and window frames stay level, plumb and square.**
3. **Firesafe — Stormproof — Termiteproof —Watertight—Not subject to decay.**
4. **Good insulation—to provide economical heating in winter—cool in summer.**

The better house must be protected from cold winters, hot summers, rain, wind, fire, ground water, termites, earthquakes. Fortunately, not all houses are called upon to withstand all these hazards, although they are required to resist most of them. The reinforced concrete and concrete masonry homes illustrated in this issue have all been designed to meet just such conditions as enumerated above.

Low Cost Light Weight Concrete House

THE steadily increasing cost of maintenance, fire insurance, termite damages and heating in the small or medium sized residence has given rise to the many types of concrete houses that are being submitted to the people of today. The trouble, so far, has been that the concrete house has not yet been brought down into the realm of the cost of the wood frame house despite all of the advertising of certain manufacturers that it has been.

Of the many new methods of construction that have been developed the Gravelite house is outstanding because of its great value as a light weight material and fine insulating properties.

The Gravelite house illustrated here is designed and constructed by a new and unique method. It is hardly little more nor less than a

Plans for Concrete House, Atherton, California

MARK DANIELS A.I.A. ARCHITECT SAN FRANCISCO

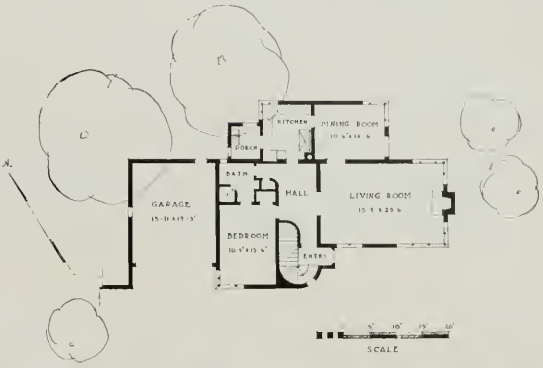


Photo by Moulin

CONCRETE HOUSE, ATHERTON, CALIFORNIA
MARK DANIELS, ARCHITECT

frame house in which all of the structural members, spandrel beams, load bearing studs, etc. are made of concrete rather than of wood. This is accomplished by an ingenious set of forms

LIVING ROOM, HOUSE IN ATHERTON, CALIFORNIA

which enables the contractor to pour 6" x 6" studs on 64 inch centers and to accommodate nailing bucks for metal lath and plaster between, set in, made of wood which has been anti-termite treated and fire-proofed by impregnating the lumber with chromated zinc chloride according to the Boxco process. By this method of construction the reinforced concrete columns and spandrel beams are where the stresses and strains call for them, which in turn results in a building of the minimum amount of concrete and steel for a given cubic content.

It is believed that when this type of construction is thoroughly worked out it will result in the lowest possible cost for a reinforced concrete house which will be fire-safe, termite proof, earthquake resistant, insulated from heat and cold and quickly built at a moderate cost.

In the house illustrated, which was built in Atherton, California, the lower floor is poured, on fill, integrally with the supporting studs. This floor is an insulation against heat and cold and is surfaced with asphaltic tile. The second floor is Gravelite concrete poured on junior steel "I" beams and is finished in linoleum with feature strips. Glass brick is used at the turn in the hall for illumination without visibility. All sash are steel and all doors are slab doors. The heating system, which occupies the smallest space yet devised for adequate heating equipment, operates in conjunction with an air conditioning plant. The roofs and decks are concrete slabs.

REINFORCED CONCRETE HOME OF J. J. MARISCHAL, SPOKANE, WASHINGTON
G. A. PEHRSON, ARCHITECT

SAN FRANCISCO
PUBLIC LIBRARY
PERIODICAL DEPT.

HOUSE FOR MR. AND MRS. O. D. GUIRE, JR., COLTON, CALIFORNIA, THE FIRST REINFORCED CONCRETE DWELLING TO BE ERECTED IN SOUTHERN CALIFORNIA UNDER FHA INSURED LOANS

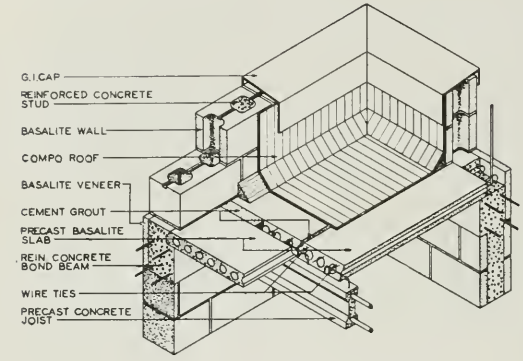
LEFT—LOGGIA
BELOW—CORNER OF LIVING ROOM

Designed by Walter L. Culver, Jr., of the San Bernardino architectural firm of Worswick & Culver, the Guire house comprises six rooms on one floor, with a 13x20 ft. single car garage which includes space for laundry, storage and a work bench. Floor area of the house is 1,285 sq. ft., including half of the porch area. A plain concrete wall 4 ft. high and 160 ft. in total length, encloses a patio in the rear of the house.

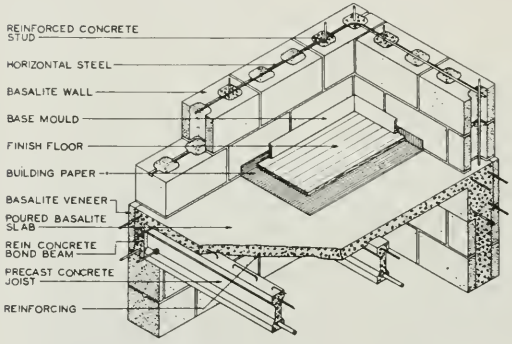
The 6-in. concrete walls of the house were placed in forms made of 1x6 boards. To assure pronounced form marking, which was desired as an architectural feature, form joints at the base and in the gable were beveled so that when the forms were removed there were fins of concrete at the joint lines. When these were knocked off ragged lines resulted. After the exterior surface was given a coat of cement paint, the form marks, combined with the texture of the concrete, produced deep horizontal shadow lines of exceptional beauty.

BASALITE LIGHT-WEIGHT REINFORCED

• • • • *Manufactured by BASALT ROCK*



"A"



"B"

WALLS: Typical wall construction, as shown in detail are of Basalite, light-weight concrete units. These unit are so designed that all cells are superimposed, permittin the placement of reinforced concrete columns within th wall at predetermined intervals. These cells also provid means for electrical wiring and plumbing within the wall

Horizontal reinforcing steel is placed within the wall a uniformly spaced intervals in the mortar joint during the process of construction in such a manner that they intersec the vertical, poured-in-place, reinforced concrete column which will be placed within the wall as already stated

Standard units manufactured are 4″ and 8″ high, 8″ and 16″ long and 4″, 6″ and 8″ thick. The units for 12″ thick walls are 8″ high, 12″ thick and 24″ long. Split units are provided to simplify masonry work around heating ducts, plumbing pipes, etc. Standard jamb units are made in all sizes for both metal and wood window and door frames. Trough units are used for providing a form for the bond beam and to conceal same within the wall as indicated in "C." Veneer units are made in all standard sizes and are used for concealing the horizontal bond beam within the wall when concrete joists are used.

FLOORS: Floor construction, as indicated in "B," is of prefabricated, reinforced, concrete joists made to specified lengths, depths, and reinforcing steel requirements according to span and load demands for each individual job. Basalite, nailable, reinforced, concrete floor slabs, either the monolithic, poured-in-place method, or the hollow precast type, may be used. "B" indicates the monolithic slab, while "A" indicates the precast slab, grouted together at the joints.

Another method for firesafe, permanent floor construction

ishown in "D." This method is frequently used in low cost me construction.

OOFS: Roof construction as indicated in "A" is used on uildings designed with flat roofs or where complete fire- afety is desired. Where roofs are constructed, as shown "C," Basalite, firesafe, insulating shingle tile are used.

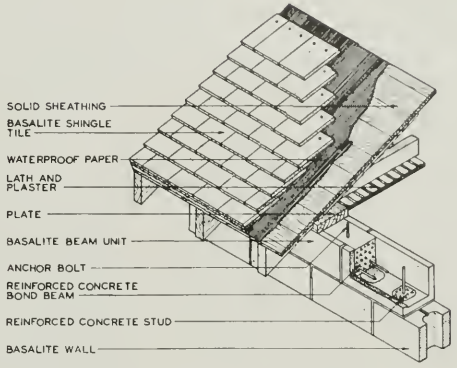
ALL FINISHES: Basalite provides an unlimited number ways for interior and exterior treatment. Its surface tex- re makes a perfect mechanical bond for plaster and erefore does not require any other plaster base. Plaster plication may either be smooth troweled or textured. ecorative possibilities directly on Basalite walls are num- ous. Paint may be applied directly to the walls in single olor tones or glazed over, giving a two-tone effect, or ey may be stained in various shades.

asalite walls are beautiful in their natural state and are equently left that way.

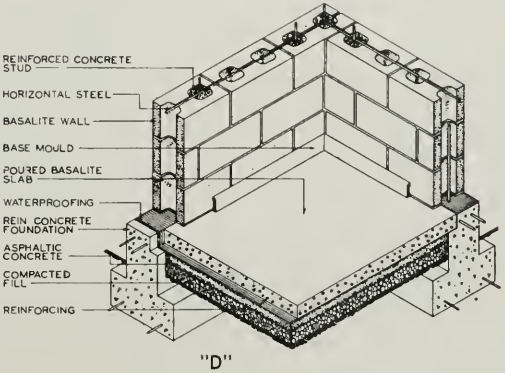
xterior walls, left natural, are covered with clear water- roofing. Otherwise waterproof paints or stuccos are used. Wood trim is always nailed directly to the Basalite.

LOOR FINISHES: Because Basalite floors are nailable, ood finish floors may be nailed to them. Linoleum or tile loors may be cemented on, or Basalite itself may be the inish floor by simply staining, sealing and waxing.

GENERAL COMMENT: Basalite is unique because it in- orporates in one single material most of the essential ualities demanded in modern construction. Some of the ost important characteristics are permanence, fireproof- ess, light-weight, insulation, nailability, termite proofness, tructural stability, flexibility in design and economy of onstruction.

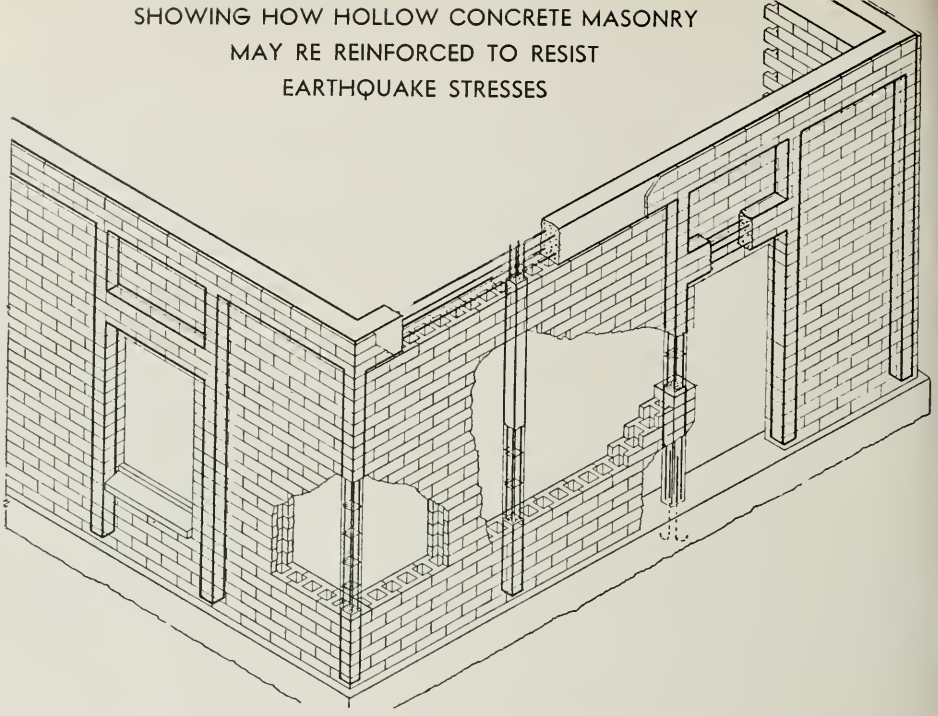


"C"



"D"

SHOWING HOW HOLLOW CONCRETE MASONRY MAY RE REINFORCED TO RESIST EARTHQUAKE STRESSES



DEVELOPS NEW CONCRETE UNIT

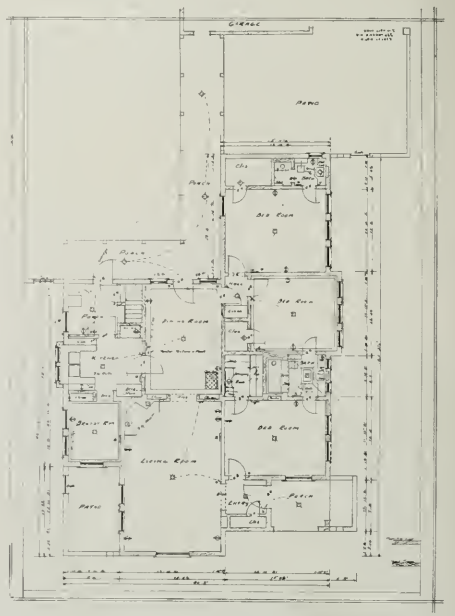
Probably the first manufacturer in the United States to use volcanic pebble pumice, vibrated with cement and water to make a structural building unit, the Jourdan Concrete Pipe Co., of Fresno reports a constantly increasing demand for its product.

The pebble pumice is obtained from deposits along the San Joaquin River upstream from Friant and is hauled in by trucks to the plant in Fresno. Concrete of this material is lighter than ordinary concrete, yet many tests have demonstrated its high compressive strength, low absorption, fireproofness, and fine insulating qualities.

Called Pumitile, the units are made in standard lengths of 12", 16", and 24", the 4", 6", and 8" width units being 3⅝" high, and the 12" units 5⅝" high. A ⅜" mortar joint is used with cement mortar. The units are pleasing in color and texture, and in many buildings the exteriors are left untreated. Paint, plaster and stucco bond firmly to Pumitile and do not check or crack.

Over fifty buildings, mostly residences, have been constructed of Pumitile in the San Joaquin Valley. Several large industrial buildings have also been constructed. With an annual temperature range of 100 degrees in the Valley, insulation is an important consideration. Pumice is an inert non-conductor, and Pumitile walls do not load up with and transmit heat and cold.

On the opposite page is shown the exterior and an interior view of one of the larger residences built of Pumitile. The exterior of this home is painted directly on the Pumitile with a cement paint. Three of the rooms are painted and the others plastered directly on the Pumitile walls.



PLAN, RESIDENCE OF J. W. HALL, FRESNO, CALIFORNIA

[See photos of house on opposite page]

JOURDAN CONCRETE PIPE CO.

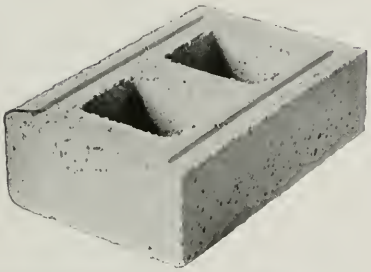
P. O. Box 914

FRESNO, CALIFORNIA

PUMITILE

is a vibrated hollow concrete building unit made of volcanic pebble pumice, cement and water.

It meets the requirements of the Uniform Building Code, the Veterans' Welfare Board and Federal Housing Administration.



In addition to being extremely fireproof, PUMITILE combines high compressive and flexural strength with exceptional insulating qualities as pumice is an inert non-conductor. It is particularly acceptable in the interior valleys of California, as no further wall insulation is needed to shut out the summer heat and winter cold.

PUMITILE may be painted, as are the exterior walls of this attractive home in Fresno. Several of the interior walls in this residence are painted, the rest being plastered directly on the PUMITILE. Plaster bonds readily and firmly and no surface checking occurs.

Residence of J. W. Hall, Fresno, California

Over 50 buildings have been erected in the San Joaquin Valley of PUMITILE, ranging in size from small residences to large industrial buildings. Many buildings are left untreated on the outside, as the PUMITILE have an attractive light buff color and pleasing texture. The cost of construction with PUMITILE is comparable to good frame stucco.

The name PUMITILE appears on the units, and is registered in California. This product is made and sold exclusively by the Jourdan Concrete Pipe Co., at their plant just north of Fresno on Highway 99.

Living Room, Residence of J. W. Hall, Fresno

CEMENT GUN CONSTRUCTION IN SIMPLIFIED FORM

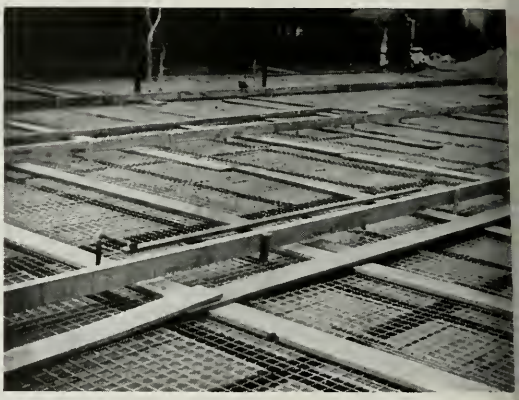
CEMENT gun construction has been used and appreciated for years but its economical application to residence work, small structures and commercial buildings, has lagged, awaiting some new discovery which would reduce the heavy cost.

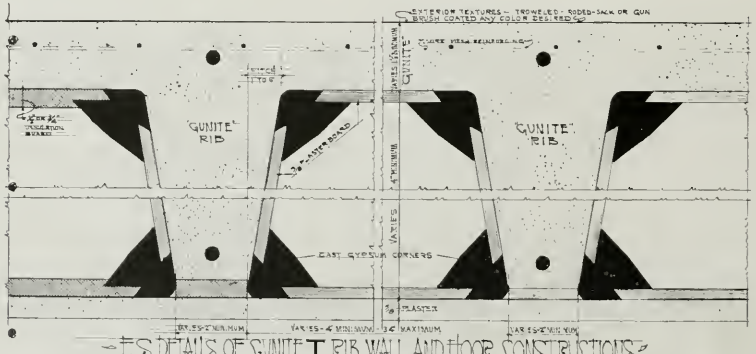
Elmer W. Marten, architect of Los Angeles, has developed a method which apparently has overcome the high cost factor in cement gun construction and has made this excellent material applicable for ordinary building.

Within the last year Mr. Marten has erected buildings all over Southern California and has clearly demonstrated a simple, foolproof method of construction which involves no special equipment, no special materials, yet furnishes a building quickly erected, tremendously strong and of fireproof, and quake-safe construction. The inventor likewise claims great insulating value for his buildings.

The method, reduced to its simplest terms, consists of structural gypsum board boxes (Rocklath or the like) piled in stacks, with intervals between the stacks. Across the front face of the stacks a heavy mesh is stretched with reinforcing bars in the interstices between stacks. Behind the stacks a temporary backing of 1 x 6 is set in place, and from the front side a gunite shell of concrete is built up covering the front faces of the boxes and forming upright studding in the spaces left between the stacks.

In erecting a building with the "Gun-Rib" construction, as the Marten system is termed, a sub-contract for the concrete work is let. If the plans for a structure have been laid out for wood frame construction a slight adaptation will be necessary as Marten's walls





DETAILS OF GUNITE T RIB WALL AND FLOOR CONSTRUCTION
BY MONOLITH HOLLOW WALL CO.

are a minimum of 6 inches thick. Supplementary structural plans and engineering are quickly worked out.

Foundations, footings and basement walls are poured of concrete in the conventional manner. Where a slab floor is to be built, a 2 inch sand cushion is first laid on the levelled ground and the regular form boxes, but coated with asphalt, are laid out in rows to form a pattern over which reinforcing mesh is spread. Runway planks are laid across the boxes and the floor is poured to form a 2½ inch slab over the top of the boxes with beams 10 inches deep and 4 inches wide every 34 inches on center. A similar line of bridging crosses the beams at 8 foot intervals. In the beams are two ⅜ inch round reinforcing bars with 2 inch by 2 inch 12 gauge mesh in the slab. Concrete is 1, 3, 5 mix. Where the floor slab bridges a basement or is otherwise self-supporting, larger size steel rods are used in the beams, ⅝ths inch being the common size. Floor slabs are monolithically finished.

In the walls the boxes are spaced according to a core secting plan. The boxes which are made of structural gypsum board, better known as plaster board, have casting plaster corners and are tied together with flat steel straps in the same manner that crates and packing boxes are fastened. The boxes are uniformly 16 inches high but are furnished in any thickness and width to make any required wall thickness and to locate wall openings, windows and doors as specified. Standard one story construction consists of cores 30 inches wide set apart to form 3 inch studs a maximum of 33 inches on center. Each of these studs is reinforced with 2 round reinforcing bars of ⅜ths inch size. To the outside rod is fastened a mesh of 2 x 2 inch mesh of 12 gauge wire and ¼ inch round steel bars at approximately 14 inch intervals horizontally. A 3 inch cross stud or bridging may be used with the same steel reinforcing as the studs and this bridging is located half way between foundation and the top of the wall.

Flat or pitched rooms may also be constructed with the Gun-Rib type of construction and long beams and trusses can likewise be fabricated.

During the past eight months the Marten system has been used in the construction of a museum on Mt. Wilson, for the Mt. Wilson Observatory, a museum in Colton, California, a medical building in Ontario, a medical building in Anaheim, and residences in Temple City, San Juan Capistrano and San Gabriel.

"DRIVE SAFELY" CONTEST

A first prize of $1,000 and fourteen other cash prizes will be awarded by the Devoe & Raynolds Company to winners of a "Drive Safely" poster contest to be conducted this winter.

The contest will start February 1 and close on April 29. It will be open to all artists in this country, whether amateur or professional. Entry blanks will be available at the store of every dealer in Devoe Artists Materials, or may be obtained by writing to the company at 580 Fifth Avenue, New York.

The purpose of this contest is to get posters that will help reduce the appalling toll of auto accidents due to careless driving.

Cuts on Pages 44 and top of 45, show Progress Pictures of Gunite rib wall and floor construction.

Right—House of Floyd E. Pendell, Los Angeles County . . . monolith hollow wall construction

"BUILDING IS ON THE UPGRADE—"

FREDERICK H. MEYER

THE building industry is now on the upgrade and will experience increasing prosperity until 1944, when the peak will be reached, according to a report by Frederick H. Meyer of San Francisco, vice president of the American Institute of Architects.

"Lucky indeed is the architect or contractor starting in business at this time, on an ascending rather than a descending wave," Mr. Meyer declares.

The demand for dwellings will become so insistent that high costs of construction and high rents will be ignored, he predicts. The history of the building industry, he points out, shows that revival begins with the erection of homes, and spreads to school, industrial, public utility, and other large structural operations.

To fight recession, Mr. Meyer urges architects and contractors to fight the trend toward higher costs rather than to rely upon economic forces to bring about the needed adjustments. These groups, he asserts, should vigorously support any program which will lead to "a sensible, reasonable growth" in the price structure of labor and material.

"The peaks of great building activity in this country occurred in 1852, 1870, 1890, 1910, and 1926, indicating an average of eighteen years between peaks," the report says. "If the present general cycle of prosperity continues, the next peak will be attained in 1944.

"It is evident from the record of the past that in the first stages of revival there is great activity in home construction; factories and manufacturing buildings follow school building construction to care for the average needs, and not until the peak has been passed is the construction of office buildings, public utilities and buildings of similar nature undertaken, usually as a result of prosperity, when corporations are looking for an outlet in which to invest."

Discussing conditions on the West Coast, Mr. Meyer says that during 1924-26 there was greater activity in single family home building than in succeeding years, and that the lowest period of home construction extended from 1929 to 1935.

"For example, in the City of Oakland, located in the San Francisco Bay metropolitan area, there were 4,637 single family homes built in 1925, while in 1934 there were only 147. During the first half of 1937, 1,100 single family homes were erected, showing the upswing of the curve toward building prosperity.

"Vacancies, on the other hand, showed a steady increase from 1927 to 1933. Even in the height of prosperity in 1929, vacancies were in excess of 5.5 per cent, reaching a peak in 1933 of 6.7 per cent, and declining until in 1937 they were at the very low point of 1.5 per cent.

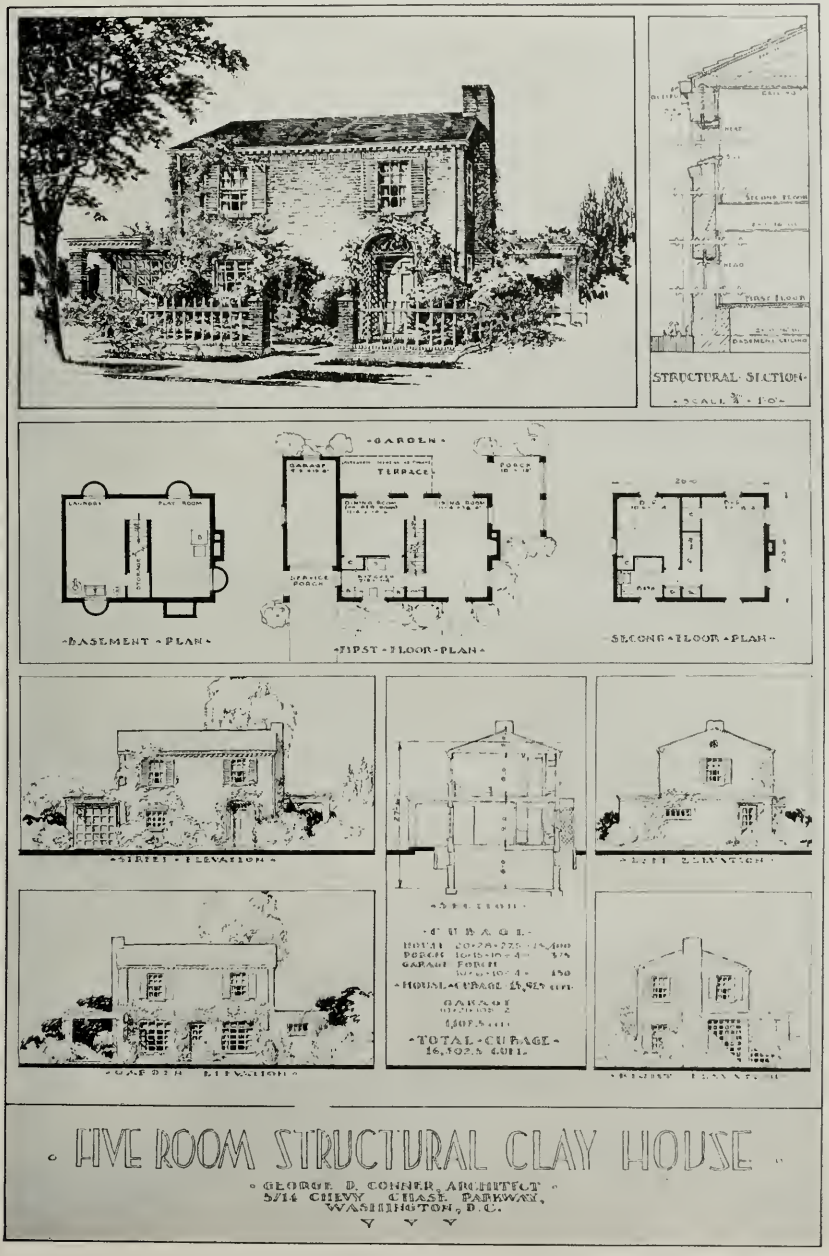
"With further influx of new settlers, improved income for the average family and a curtailed home building program, the number of vacant dwellings will be reduced until the demand for space cannot be ignored and homes will be built in spite of high cost and rent.

"The West seemingly enjoyed better business conditions even during the depths of the depression, than prevailed in most of the United States. Perhaps its very isolation by the high mountains separating it from the desert country, and its temperate climate, have been the reasons for a great migration of people from the East to the West, particularly during the unusual conditions that existed in the central part of the United States.

"This influx of people, many of them without means, made the housing problem acute in all of the cities and towns of the West, to say nothing of the added social problems and the pressing need for the care of the sick and the destitute.

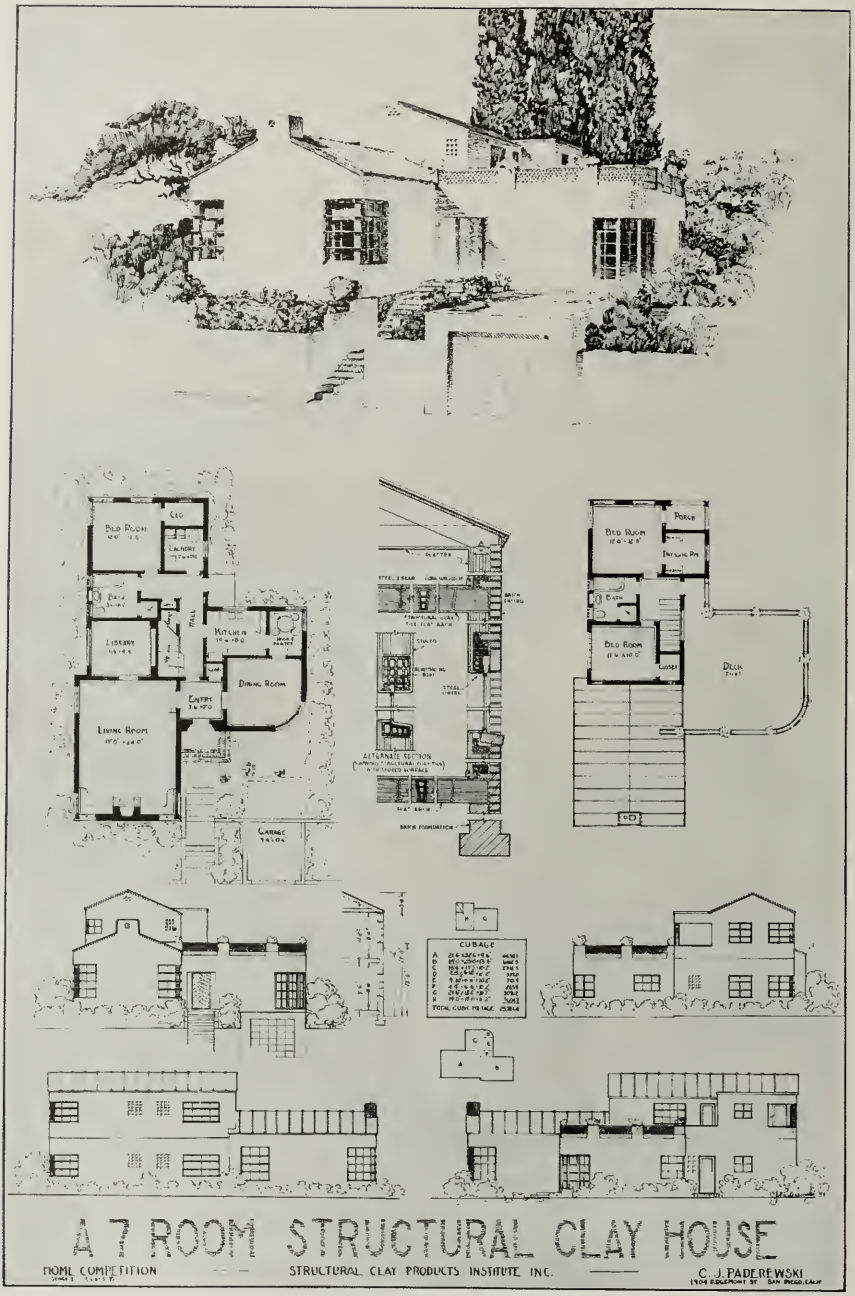
"While the construction industry in most of these communities valiantly attempted to meet the demand, they found that it was impossible to keep pace, through no fault of their own, because the average builder could neither influence the public buyer demand for housing nor control the rise in price of building materials and labor. Recovery and prosperity were not old enough to build up new financial reserves for the housekeeper, and the newcomer usually was without funds."

Portfolio of Competitive Designs for a Structural Clay House—CONDUCTED BY STRUCTURAL CLAY PRODUCTS INSTITUTE



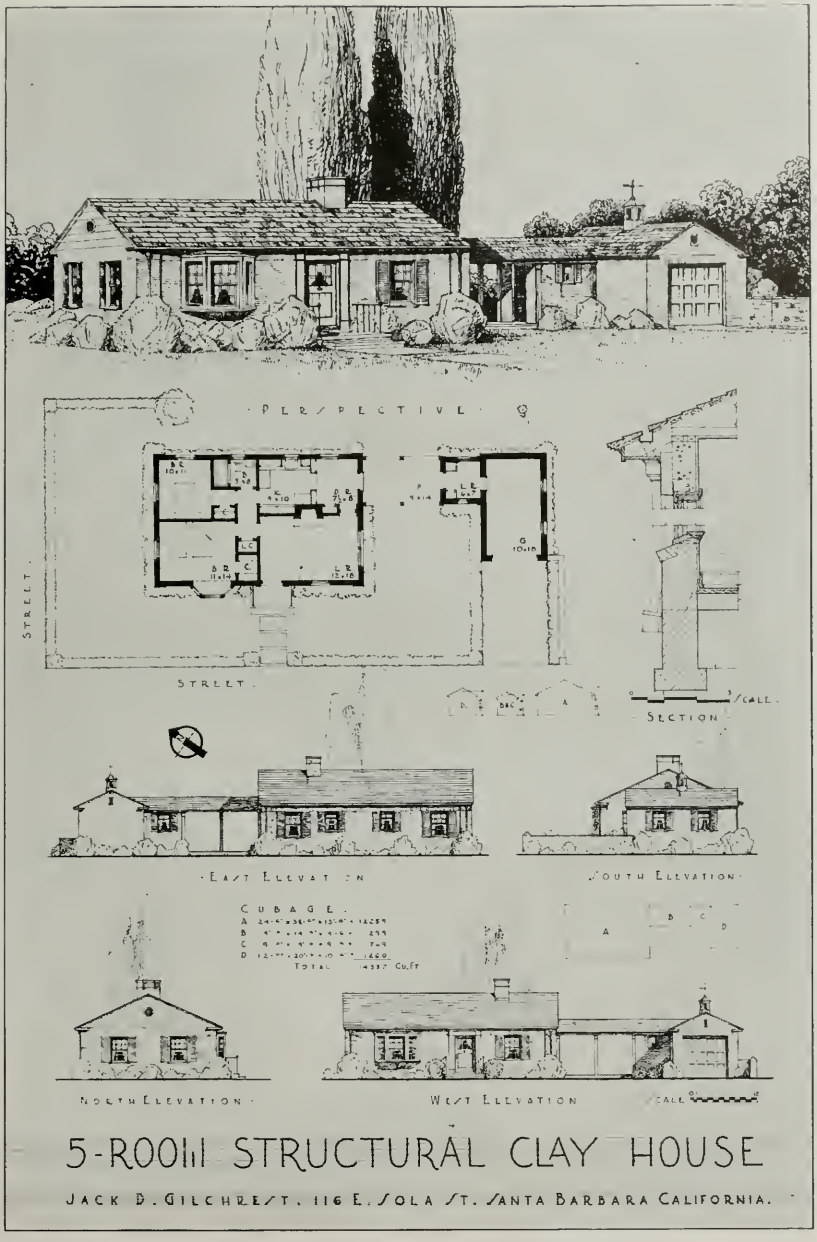
FIRST PRIZE IN CLAY MASONRY HOUSE COMPETITION

George D. Conner, Architect, Washington, D. C.



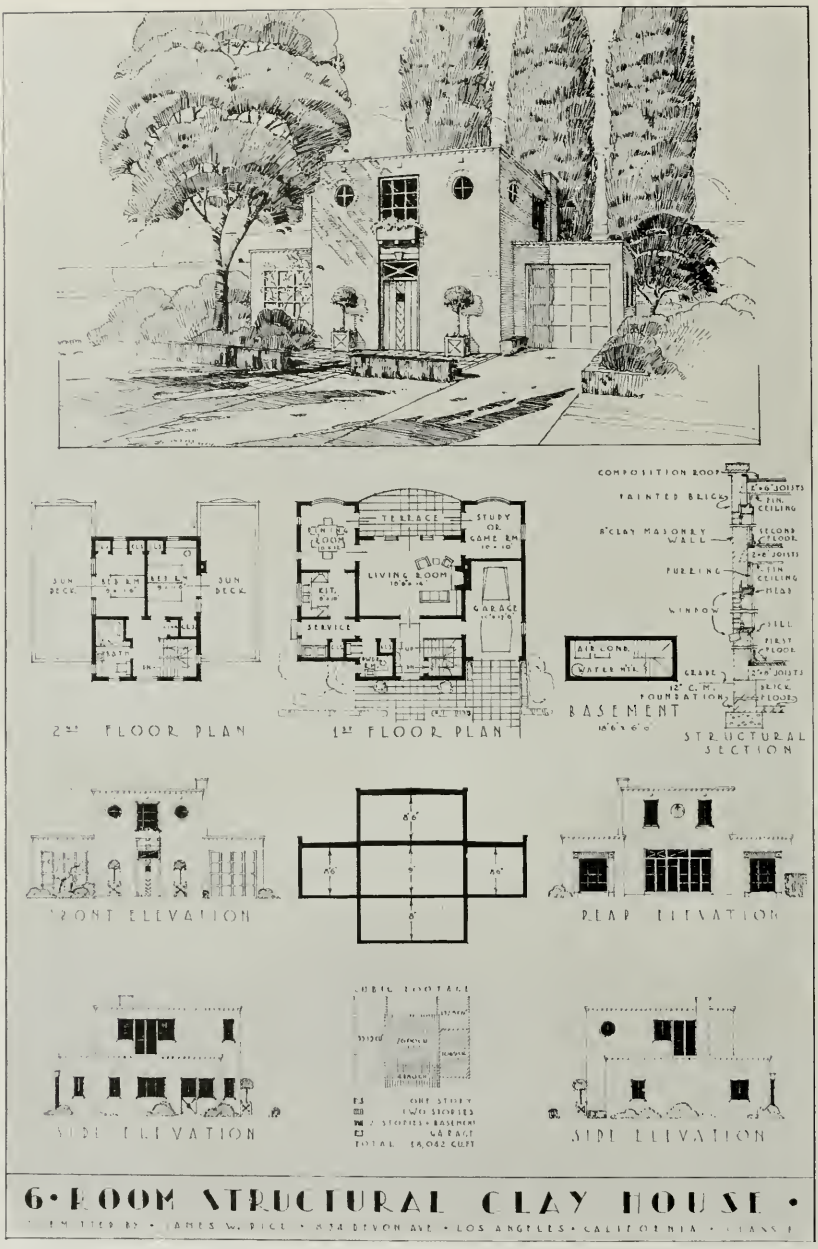
AWARDED MENTION IN CLAY MASONRY HOUSE COMPETITION

C. J. Paderewski, San Diego, California



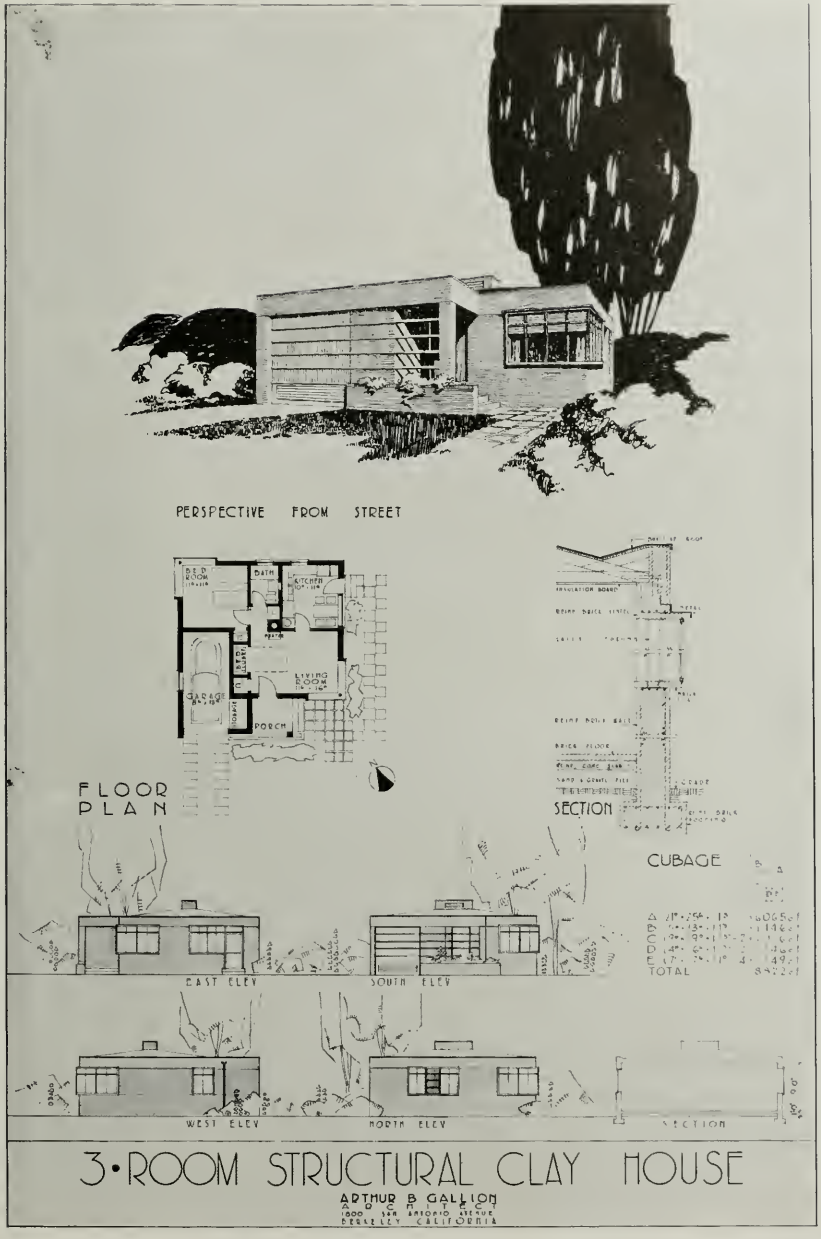
AWARDED MENTION IN CLAY MASONRY HOUSE COMPETITION

Jack D. Gilchrest, Santa Barbara, California



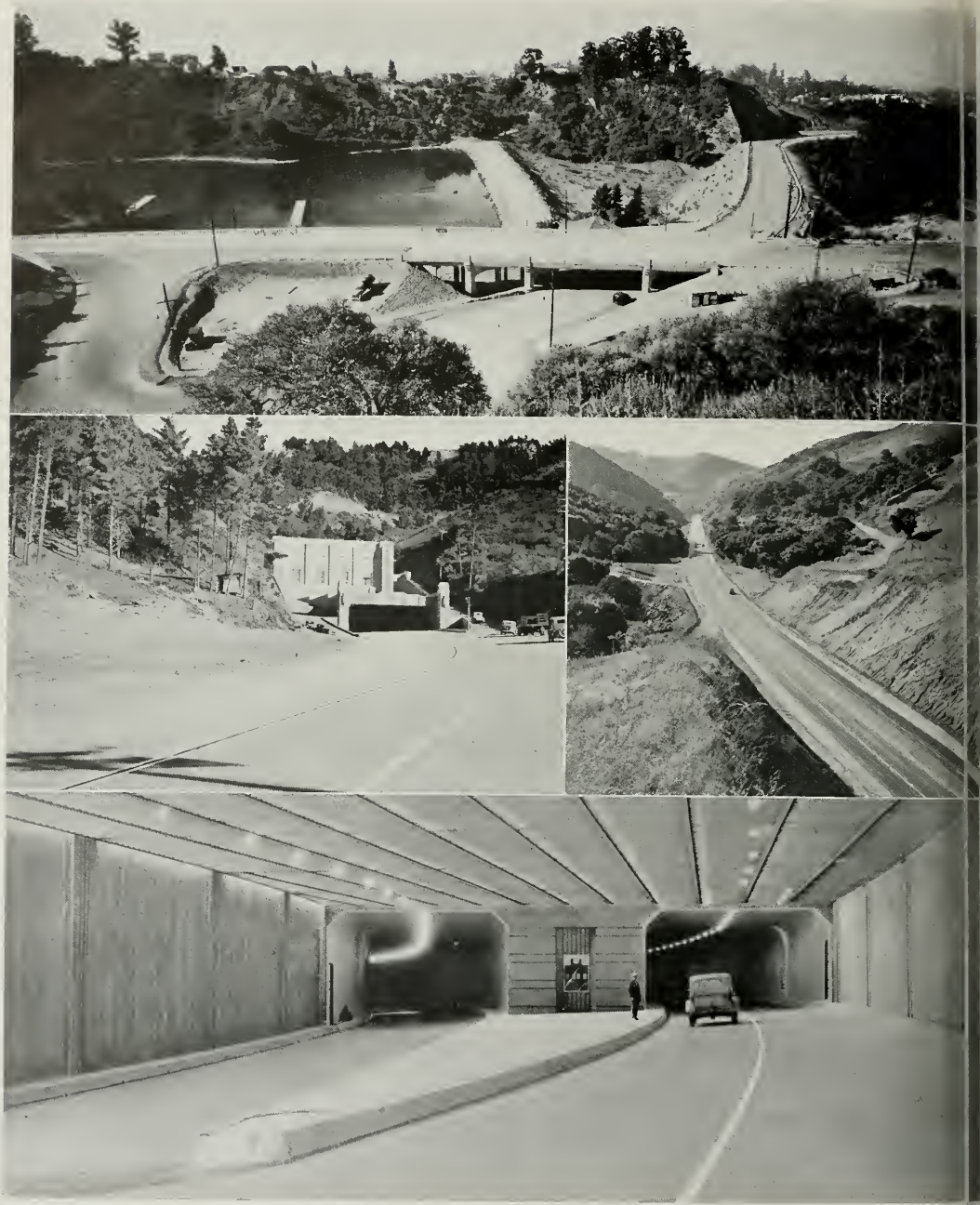
AWARDED MENTION IN CLAY MASONRY HOUSE COMPETITION

James W. Rice, Los Angeles



AWARDED MENTION IN CLAY MASONRY HOUSE COMPETITION

Arthur B. Gallion, Berkeley, California



Illustrations Courtesy California Highways and Public Works

BROADWAY LOW LEVEL TUNNEL PROJECT, Oakland, California. Upper—Landvale overhead across west approach to tunnel. Center left—east portal of bore. Center right—State highway leading from Moraga Junction to east portal. Lower—Twin tubes of tunnel and lighting system.

BROADWAY TUNNEL JOINS TWO NORTHERN CALIFORNIA COUNTIES

THE Broadway Tunnel which joins Alameda and Contra Costa Counties in Northern California, is open for traffic, its dedication in December consummating 11 years of planning and difficult construction work, costing more than $4,500,000.

Cooperation of the Federal government and the State of California with Joint Highway District No. 13 comprising Alameda and Contra Costa, made possible completion of the project. A PWA grant of $1,095,000 and a State contribution of gas tax moneys amounting to $700,000, added to funds raised by the two counties, financed the undertaking. The State assumes maintenance of the tunnel as a unit of the highway system.

A community breakfast at the Hotel Claremont in Berkeley Sunday morning, December 5, was attended by 900 people who later joined in the dedicatory ceremonies at the tunnel.

The Broadway Low Level Tunnel project, from the junction of the Oakland approach with Broadway to the east portal junction with State Highway Route 75 in Contra Costa County, is 2.8 miles in length. This project replaces a number of circuitous routes from various sections of Oakland and Berkeley, crossing the backbone of the hills between Alameda and Contra Costa counties at a summit elevation of 1300 feet, using the "Fish Ranch Road," or a 1040 foot length timber tunnel, 17 feet clear width between sidewall timbers, at a summit elevation of 1045 feet connecting with the Skyline Boulevard.

The new tunnel will afford savings in distance of from .2 mile from Berkeley to 1.2 miles from downtown Oakland, using the Fish Ranch Road, and 1.9 miles from Oakland via the Skyline Boulevard and original tunnel.

The elevation of the new tunnel is approximately 750 feet at the west portal and about 130 feet higher at the east portal, which places it from 160 to 290 feet below the original narrow two-lane tunnel.

The minimum radius curve on the new project is 800 feet, the new alignment representing a saving of some ten complete circle-turns between Oakland and Contra Costa counties via the original tunnel.

The Oakland approach is 1.9 miles in length, with pavement constructed forty feet in width, with ten-foot shoulders on either side. Three highway grade separations have been constructed on this approach, with a clear roadway width of 44 feet between curbs. One of these three structures is combined with an overhead crossing over the Sacramento-Northern electric railroad.

The twin bores of the tunnel proper consist

[Please turn to Column 2, Page 61]

Sketch map shows location of Broadway Tunnel and Berkeley connections. Old Tunnel Road shown by wavy dotted line.

A FAIR ARCHITECT

ARTHUR BROWN, JR.,
Chairman of Architectural Commission, 1939 G. G. International Exposition
—An informal candid camera pose by Mike Roberts

PROFESSIONAL participation in three major World's Fairs is an opportunity (unless perhaps it's a headache) that is accorded few architects, yet Arthur Brown, Jr., Chairman of the Golden Gate International Exposition's Architectural Commission, is heading into his third right now.

As associate architect for the Panama-Pacific International Exposition in 1915, and as a member of the Architectural Commission of A Century of Progress at Chicago in 1933, Mr. Brown was adequately exposed to the fine frenzy of frantic fantasy that makes a World's Fair unlike an infantry barracks.

So he headed into his third with the firm conviction that there's a practical side to World's Fairs, too. The exhibitor, Mr. Brown believes, deserves a break in return for his cash money—he can't be shoved off on a side street to languish in lonesomeness while the crowd sticks to the main stem.

Mr. Brown, sold on this, has given the key plan of Treasure Island a practical virtue that exhibitors will appreciate and visitors, goggle-eyed, won't even perceive. By dispersing the magnets and placing the exhibitors in the middle of them, Mr. Brown and his Architectural Commission have insured a constant thunder of feet through the showrooms.

Clear, simple and complete circulation—constant invitations to wander and see and learn—inter-relation of groups with an eye to purpose and destinations—these are the ingredients in a recipe that produces a tasty dish of uniform saturation, and gives everybody a break.

This done, Mr. Brown turned his attention to the necessarily attractive and playful character of Exposition architecture. He was a member of the Architectural Commission of the great San Francisco-Oakland Bay Bridge, too, so he designed for the Fair a 400-foot central theme tower—a transition from the lofty bridge to the monumental masses of Exposition buildings, a weapon against the tricks of perspective.

His tower is of classic proportions, simplified so that it has something of the up-and-down beauty of a bridge tower, and rightly so, for it is intended as the dominant vertical note that will lift Treasure Island visually up among them.

Between World's Fairs, independently or as architectural consultant for the Treasury, Mr. Brown created the Department of Labor and Interstate Commerce Commission buildings in Washington, D. C.; the Federal Office Building in San Francisco, Coit Tower, the San Francisco War Memorial, and more. As half of Bakewell & Brown his penciled lines are alive in the city halls of San Francisco, Berkeley and Pasadena; in outstanding Stanford University buildings, and in many another looming structure. Remembered still, though no longer looming, is the glorious Horticultural Building of the Panama-Pacific International Exposition.

With the Architects

KENNETH MacDONALD, JR.

Kenneth MacDonald, Jr., 57, who, for a number of years practiced architecture in San Francisco, associated with G. A. Applegarth, died at his home in Los Angeles December 21st of a heart ailment. Just prior to moving to Los Angeles, Mr. MacDonald was associated with the late Maurice Couchot, structural engineer. Mr. MacDonald was an artist of ability, and his work embraced a variety of buildings, from residences to apartments and commercial structures. One of his recent Los Angeles commissions was the Hill Garage on South Spring Street. The Broadway Spring Arcade Building of Los Angeles, was also designed by him. His brother, Allen, a member of the firm of MacDonald & Kahn, passed away two years ago, following a heart attack. Kenneth MacDonald is survived by a widow and two daughters. He was a member of Southern California Chapter, A. I. A.

SACRAMENTO ARCHITECT BUSY

Harry J. Devine, Cronan Building, Sacramento, has completed working drawings for an addition to the Sacramento City Hall, estimated to cost $25,000. Construction will be three stories, of reinforced concrete. Preliminary drawing are in progress for an addition to the Sacramento Radio Station at Seventh and I Streets, Sacramento, and also for a Novitiate building to cost $150,000, for the Sisters of Mercy at Auburn. Plans have been completed by Mr. Devine for a new gymnasium building to replace the one damaged by fire at Elk Grove. A parish house at Benicia is also being designed in Mr. Devine's office and alterations to the First National Bank, Oroville, have reached the preliminary drawing stage.

ALBERT H. LARSEN BUSY

New work in the office of Albert H. Larsen, 333 Kearny Street, San Francisco, includes a $15,000 flat building for an unnamed client in Pacific Heights, San Francisco; two $5,500 residences on Innes Street, San Francisco, for Mrs. A. Herman; two five-room flats on 48th Avenue, San Francisco, for Ray Buccinelli; four five-room residences on Noriega Street, near 42nd Avenue, San Francisco, for the Golden Gate Investment Company, and three houses near Colma, San Mateo County, for Paul A. Wolters, Jr., 90 Ravenswood Drive, San Francisco.

EXPOSITION BUILDING

Bakewell & Weihe and Virgil Jorgensen have had their preliminary plans approved for an exhibition building for the Ghirardelli Company at the Golden Gate International Exposition. Working drawings are now being prepared.

SAN MATEO JUNIOR COLLEGE

Working drawings are practically completed for a new science building, the first unit of a group of educational structures for the San Mateo Junior College District. The architect is Harry A. Thomsen; structural engineer, H. J. Brunnier and mechanical engineers, Hunter & Hudson, all of San Francisco. Mr. Thomsen is also busy on plans for a milk distributing plant for the Marin Dairymen's Association, 1685 Howard Street, San Francisco.

PAROCHIAL SCHOOL

St. Phillip's Parochial School has commissioned Martin J. Rist, Phelan Building, San Francisco, to prepare plans for nine classrooms and a cafeteria building to be built at Elizabeth and Diamond Streets, San Francisco, at an estimated cost of $125,000. Construction will be of reinforced concrete.

SAN JOSE APARTMENT BUILDING

Edward W. Kress, of San Jose, is preparing preliminary working drawings for 36 two-room apartments to cost $75,000. The same architect has completed plans for an addition to the Hart Department Store, Market and Santa Clara Streets, San Jose, estimated to cost $80,000.

PERSONAL

Architect **Leslie Mahoney** of Phoenix, has been appointed a member of the Arizona State Board of Technical Registration to succeed **Henry O. Jaasted** of Tucson, whose term had expired.

Sylvanus B. Marston has been appointed a member of the City Planning Commission of Pasadena, succeeding **Alexander Davison,** resigned. Mr. Marston is the first architect chosen to serve on the commission since it was created. He has practiced architecture in Pasadena since 1910.

Professor **Howard Moise** of the School of Architecture, University of California, exhibited the work of prominent building designers and gave an illustrated lecture when the architectural display of the Civic League of Richmond, Contra Costa County, opened recently.

Eight mural fresco panels representing various stages in the development of the organ, were recently completed and placed in the conservatory of the residence of Hollister Sprague, Seahurst, Seattle, by Architect **John T. Jacobsen,** Textile Tower, Seattle.

Carl F. Gould of Bebb & Gould, architects, has been appointed chairman of the Seattle area to arrange for participation in the 52nd Annual Exhibition of the Architectural League of New York City, April 19 to May 14.

Structural Engineers of Northern California Name New Officers

Harold B. Hammill was elected president of the Structural Engineers Association of Northern California for 1938 at the annual meeting of the board of directors December 9. Sidney S. Gorman was elected vice-president and Alfred P. Fisher, secretary-treasurer.

The directors are: H. M. Engle, Sidney S. Gorman, Frederick F. Hall, Harold B. Hammill and A. V. Saph, Junior.

A. V. Saph, Jr. is the retiring president while the retiring directors are: William Adrian, John J. Gould and Jesse Rosenwald.

100 ATTEND MONTHLY MEETING

The regular monthly meeting of the Association was held at the Engineers' Club on December 7 and was attended by about 100 members and guests. Reports of the activities of all the standing committees were read, with recommendations for the work of the committees for the new year. In addition to the election of directors and committee reports, there were motion pictures furnished by the McCormick Lumber Company, showing the procedure of coal-tar creosote treatment of lumber.

The past year was the most important in the history of the Association, with a larger membership, greater member attendance at monthly meetings and with more accomplishment in the operations of the standing committees. The most important work of the year was the sponsoring of the State Engineers' convention at Sacramento last March, when 500 engineers of various classifications met with State Legislators and other prominent business men for discussion of the theme, "The Place of the Engineer in Public Affairs."

The structural engineers are mainly interested in the design and construction of buildings and bridges in which the principal building materials are wood, steel and concrete. They are closely associated with architects, contractors and the building industry generally.

Under the direction of President-elect Hammill, it is expected that the Association will soon be recognized as one of the leading engineering societies in the West.

FIRST 1938 MEETING

The first regular meeting of the Structural Engineers Association of Northern California this year was held at the Engineers' Club, 206 Sansome Street, San Francisco, Tuesday evening, January 4.

Following the installation E. P. Burton of the Aluminum Company of New York spoke on "Examples and Considerations in the Design of Aluminum Alloy Structures". The talk was illustrated with motion pictures.

THEIR 1938 CHIEF

HAROLD B. HAMMILL

SKETCH OF NEW PRESIDENT

Harold B. Hammill, newly elected president of the Structural Engineers Association of Northern California, to succeed A. V. Saph, Jr., is a graduate of the University of California, College of Civil Engineering, Class of 1912.

Upon graduation, Mr. Hammill worked with the Pacific Gas and Electric Company for two years, then going to Gary, Indiana, to the plant of the American Bridge Company as a structural detailer. Later he went to New York and while there spent some time with the Eiectric Bond and Share Company on the design of hydraulic structures. Later he became designing engineer for the Terry and Tench Company, makers of derricks and cranes.

During the World War Mr. Hammill served in the Navy Department on the construction of the Lafayette Radio Station. Returning to California in 1919, he spent one year with the Pacific Gas and Electric Company. He then became associated with Jno. B. Leonard, consulting civil structural engineer. In 1927 he opened his own office and has been engaged in structural engineering in San Francisco since that time.

ARCHITECTS' BULLETIN

Issued For

THE STATE ASSOCIATION OF CALIFORNIA ARCHITECTS

Northern Section

STATE ASSOCIATION MEMBER
OF THE
MERICAN INSTITUTE OF ARCHITECTS

Editor

Harris C. Allen

ddress all communications for publication the Bulletin to the Editor (Harris C. llen) 557 Market Street, Room 218, San ancisco, California.

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Gwynn Officer

1938 ACTIVITIES

PRESIDENT MICHELSEN put considerable time and thought into his committee appointments, and is following this up by personal communication with the various chairmen. He has outlined desirable and important work for each committee and expects definite results. Committee work can be efficient and productive, or it can be negligible to an extent of "innocuous desuetude", as Ex-President Taft used to say. In either case, responsibility is usually to be placed on two persons—the appointing officer and the committee chairman. So far, our President has more than fulfilled the duties of his office; and we are inclined to believe that his choice of committee members has been wise and that the best interests of the Association will be advanced in 1938, through live functioning of Executive Board and Committees.

ARCHITECTURAL STANDARDS

The A. I. A. Committee on State Organizations, headed by Mr. John R. Fugard, has formulated a document to set out the fundamentals that underlie the practice of architecture, to which every architect, whether or not an Institute member, can subscribe. It is developed from principles already established in existing Institute documents, but generalized so as to be intelligible to the public as well as to the profession. It is intended to be the publicized document of the whole profession, to explain what an architect does (and what he can not do), and what are the proper relations of architects, clients and contractors. It also will set out methods of selecting and of paying architects.

Copies have been sent to our Association and are being studied by the committees on Professional and Public Relations. Their comments will be considered by the Executive Board and the ensuing suggestions or criticisms will be sent to Mr. Fugard. It is hoped that early in 1938 these documents, as finally approved, can be printed by the Institute and distributed where this information may be of practical value.

Many attempts have been made to produce an ideal paper of this nature, but none has so far been entirely satisfactory. Usually, they have been too long and technical, often confusing to the layman. Several years ago this Association published a document entitled "Advice and Counsel in the Planning, Designing and Construction of Public Buildings: a Discussion of the Services of the Architect." This was not only clear and complete in its informative matter, but was exceptional in its form, with separation into short paragraphs each having a descriptive headline in the wide margin. Although the paper was directed primarily to school boards, it can be used for clients of any type when architects wish to explain their services to prospective builders. Copies may still be secured at the Association office. This document, it should be made clear, is not intended or suited for general public use, such as distribution to banks or other financing agencies.

OFFICE HOURS

For the benefit especially of committee members, and also of any others who may wish to visit the Association office for information or to secure any of the Association publications, it should be noted that the hours of the office secretary, Miss Kragen, are from 9:30 to 12:30 every morning, Monday to Friday inclusive.

SUBSCRIPTIONS

Several questions have been received in regard to annual subscriptions which are now due. Very soon now, all members will receive a communication from Treasurer Hintermann containing all necessary information on this vital subject. A general notice may be given, however, that subscriptions are still set at $5.00 each, annually, and no one need wait for this special notice if he feels the urge to speed our activities. Form in line on the right.

GREETINGS

The Public Relations Committee takes pleasure in sending wishes for a most happy and prosperous new year to all the members of this large family of ours. May 1938 demonstrate for our Association, more clearly than ever, that in union is strength, and that by and large, architects are pretty good fellows to have for friends and associates.

NORTHERN CALIFORNIA CHAPTER

The regular meeting of Northern California Chapter, A. I. A., was held at the Stewart Hotel, San Francisco, Tuesday, November 30, Warren C. Perry presiding.

Mr. Garren moved that a committee be appointed with instruction to establish a date for an Honor Award Exhibit in the Spring, and to arrange for ways and means and exhibit space in connection therewith. The motion was unanimously carried.

Mr. Meyer presented interesting data on the sequence of peak building periods in past years, indicating the approach of a new era that is expected to reach its greatest height in 1944-45. In his opinion, the profession should look forward to a prosperous busy time throughout this period. Mr. Meyer's paper is published in full on another page.

Mr. Howard Moise gave an account of his summer trip to Java and Bali. The interesting tale of his journey was interspersed with personal experiences that had permitted him to intimately study the architecture, music, dances, and religious rites of the inhabitants. The description of these phases of social structure was augmented with stereopticon slides, phonograph records of native music and display of drawings and fabrics collected during the trip.

Reciprocal influences upon country and traveler were manifested when the speaker exhibited designs for a house, in Balinese manner, which he stated were made for his host and hostess during the visit.—J.H.M.

SOUTHERN CALIFORNIA CHAPTER

Southern California Chapter, American Institute of Architects, at its December meeting, elected new officers as follows:

Eugene Weston, Jr., president; Samuel E. Lunden, vice-president; Edgar Bissantz, secretary; Earl T. Heitschmidt, treasurer; George J. Adams, director for two years; A. C. Zimmerman, director for three years. S. B. Marston, who has served on the board of directors for the past two years, remains on the board for one more year.

An illustrated talk on the construction of the new tile mosaic on the facade of the Long Beach municipal auditorium was made by Thyrsis Field, state director for Southern California, Federal Art Project of the WPA; Buckley MacGurnin, Frank L. Stevens, Albert H. King and L. Roy Robbins, members of the Federal Art Project, and S. Macdonald Wright, who conceived the Long Beach mosaic, were introduced.

Ralph Flewelling, who presided at the meeting, stated that the February meeting of the Chapter would be devoted to honor awards and that it would probably be held at the California Club.

Graham Latta and Paul Haynes, new associate members of the Chapter, were introduced by Carleton M. Winslow.

The Chapter adopted a resolution favoring competitions for the preparation of plans for public buildings.

WASHINGTON STATE CHAPTER

Washington State Chapter, A.I.A., including those members residing in Tacoma and other cities in the state, participated in the annual Christmas party at the residence of J. Lister Holmes, Seattle. The party started with a turkey dinner at 6:15 o'clock in the evening, which was prepared by Mrs. Holmes as hostess, assisted by Mrs. John T. Jacobsen.

Immediately following the dinner, a short business session was held at which the nominating committee reported the advisory slate of officers to be elected for 1938. John T. Jacobsen, Seattle, exhibited eight murals on the history of music, the result of his own extensive study and artistic work.

Chief feature of the entertainment program was a humorous sketch competition, which was preceded by a contest in serious mien. The program was prepared by the entertainment committee, consisting of Chairman LaMonte Shorett, Henry Olschewsky, Jack Sproule, Donald Thomas, William Bain and Theodore Carroll.

WASHINGTON STATE SOCIETY

Washington State Society of Architects has elected James M. Taylor, Jr., Seattle, president for the year of 1938. Other officers are: Julius Zittel, Spokane, first vice-president; Stanley Smith, Pullman, second vice-president; R. Max Thorne, Renton, third vice-president; Oscar F. Nelson, Seattle, secretary; and Harry G. Hammond, Seattle, treasurer.

Estimator's Guide

Giving Cost of Building Materials, Wage Scale, Etc.

Amounts given are figuring prices and are made up from average quotations furnished by material houses to San Francisco contractors. 3% Sales Tax on all materials but not labor.

All prices and wages quoted are for San Francisco and the Bay District. There may be slight fluctuation of prices in the interior and southern part of the state. Freight cartage, at least, must be added in figuring country work.

Sand—1½% amount of contract.

Brickwork—

Common. $40 to $45 per 1000 laid, (according to class of work).

Face, $100 to $110 per 1000 laid, (according to class of work).

Brick Steps, using pressed brick, $1.25 lin. ft.

Brick Veneer on frame buildings, $ .75 sq. ft.

Common f.o.b. cars, $14.00 at yard. Cartage extra.

Face, f.o.b. cars, $45.00 to $50.00 per 1000, carload lots.

HOLLOW TILE FIREPROOFING (f.o.b. job)

3x12x12 in.	$ 84.00 per M
4x12x12 in.	94.50 per M
6x12x12 in.	126.00 per M
8x12x12 in.	225.00 per M

HOLLOW BUILDING TILE (f.o.b. job) carload lots.

8x12x5½	$ 94.50
6x12x5½	73.50

Building Paper—

1 ply per 1000 ft. roll	$3.50
2 ply per 1000 ft. roll	5.00
3 ply per 1000 ft. roll	6.25
Brownskin, 500 ft. roll	4.50
Brownskin, Pro-tect-o-mat, 1000 ft. roll	9.00
Sisalkraft, 500 ft. roll	5.00
Sash cord com. No. 7	$1.20 per 100 ft.
Sash cord com. No. 8	1.50 per 100 ft.
Sash cord spot No. 7	1.90 per 100 ft.
Sash cord spot No. 8	2.25 per 100 ft.

Sash weights cast iron, $50.00 ton.
Nails, $3.50 base.
Sash weights, $45 per ton.

Concrete Work (material at San Francisco bunkers)—Quotations below 2000 lbs. to the ton. $2.00 delivered.

No. 3 rock, at bunkers	$1.45 per ton
No. 4 rock, at bunkers	1.45 per ton
Elliott top gravel, at bunkers	2.10 per ton
Washed gravel, at bunkers	1.45 per ton
Elliott top gravel, at bunkers	2.10 per ton
City gravel, at bunkers	1.45 per ton
River sand, at bunkers	1.40 per ton
Delivered bank sand	1.00 cu. yd.

Note—Above prices are subject to discount of 2% per ton on invoices paid on or before the 10th of month, following delivery.

SAND

Del Monte, $1.75 to $3.00 per ton.
Fan Shell Beach (car lots, f.o.b. Lake Majella), $2.75 to $4.00 per ton.

Cement (paper sacks) $3.00 bbl., warehouse or delivery.
Car-load lots delivered $2.70, f.o.b. cars $2.52
(Cloth sacks) $3.00 bbl..
Rebate 10 cents bbl. cash in 15 days.

Atlas White, Calaveras White, Medusa White: 1 to 100 sacks, $1.50 sack, warehouse or delivery; over 100 sacks, $1.25; 2% discount 10th of month.

Forms, Labors average $40.00 per M.
Average cost of concrete in place, exclusive of forms, 35c per cu. ft.; with forms, 60c.
4-inch concrete basement floor ..... 12½c to 14c per sq. ft.
Rat-proofing 7½c
Concrete Steps ..... $1.25 per lin. ft.

Dampproofing and Waterproofing—

Two-coat work, 20c per yard.
Membrane waterproofing—4 layers of saturated felt, $4.50 per square.
Hot coating work, $1.80 per square.
Medusa Waterproofing, 15c per lb., San Francisco Warehouse.
Tricocel waterproofing.

Electric Wiring—$12.00 to $15.00 per outlet for conduit work (including switches). Knob and tube average $3.50 per outlet.

Elevators—

Prices vary according to capacity, speed and type. Consult elevator companies. Average cost of installing an automatic elevator in four-story building, $2800; direct automatic, about $2700.

Excavation—

Sand, 60 cents; clay or shale $1 per yard.
Teams, $12.00 per day.
Trucks, $22 to $27.50 per day.
Above figures are an average without water. Steam shovel work in large quantities, less; hard material, such as rock, will run considerably more.

Fire Escapes—

Ten-foot galvanized iron balcony, with stairs, $115 installed on new buildings; $140 on old buildings.

Floors—

Composition Floors—18c to 35c per sq. ft. In large quantities, 16c per sq. ft. laid.
Mosaic Floors—80c per sq. ft.
Duraflex Floor—23c to 30c sq. ft.
Rubber Tile—50c to 75c per sq. ft.
Terazzo Floors—45c to 60c per sq. ft.
Terazzo Steps—$1.60 lin. ft.

Hardwood Flooring (delivered to building)—

⅜x2¼" T & G Maple	$ 88.00 M ft.
1⅛x2¼" T & G Maple	115.00 M ft.
⅞x3½" sq. edge Maple	100.00 M ft.

	¾"x2¼" T&G	⅜"x2" T&G	⅝"x2" Sq. Ed.
Clr. Otd. Oak	$120.00 M	$ 82.50 M	$110 M
Sel. Otd. Oak	99.00 M	69.50 M	84 M
Clr. Pla. Oak	106.00 M	74.50 M	86 M
Sel. Pla. Oak	97.00 M	62.50 M	76 M
Clear Maple	111.00 M	100.00 M	
Laying & Finishing	14c ft.	12c ft.	10c ft.

Wage—Floor layers, $10.00.
Note—Above quotations are all board measure except last column which is sq. ft.

Glass (consult with manufacturers)—

Double strength window glass, 20c per square foot.
Quartz Lite, 50c per square foot. Plate 75c per square foot (unglazed) in place, $1.00.
Art, $1.00 up per square foot.
Wire (for skylights), 40c per sq. foot.
Obscure glass, 30c square foot.
Glass bricks, $2.40 per sq. ft., in place.
Note—If not stipulated add extra for setting.

Heating—

Average, $1.90 per sq. ft. of radiation, according to conditions.
Warm air (gravity) average $40 per register.
Forced air, average $60 per register.

Iron — Cost of ornamental iron, cast iron, etc., depends on designs.

Lumber (prices delivered to bldg. site).

No. 1 common	$38.00 per M
No. 2 common	34.00 per M
Select O. P. common	39.00 per M
2x4 No. 3 form lumber	26.00 per M
1x4 No. 2 flooring VG	65.00 per M
1x4 No. 3 flooring VG	55.00 per M
1x6 No. 2 flooring VG	65.00 per M
1¼x4 and 6, No. 2 flooring	70.00 per M

Slash grain—

1x4 No. 2 flooring	$50.00 per M
1x4 No. 3 flooring	40.00 per M
No. 1 common run T. & G.	35.00 per M
Lath	8.00 per M

Shingles (add cartage to price quoted)—

Redwood, No. 1	$1.10 per bdle.
Redwood, No. 2	.90 per bdle.
Red Cedar	1.00 per bdle.

Millwork—Standard.

O. P. $110.00 per 1000. R. W., $115.00 per 1000 (delivered).
Double hung box window frames, average, with trim, $6.50 and up, each.
Doors, including trim (single panel, 1¾ in. Oregon pine) $8.00 and up, each.
Doors, including trim (five panel, 1¾ in. Oregon pine) $6.50 each.
Screen doors, $4.00 each.
Patent screen windows, 25c a sq. ft.
Cases for kitchen pantries seven ft. high, per lineal ft., $8.00 each.
Dining room cases, $8.00 per lineal foot.

Labor—Rough carpentry, warehouse heavy framing (average), $17.50 per M.
For smaller work average, $35.00 to $45.00 per 1000.

Marble—(See Dealers)

Painting—
Two-coat work ..... 35c per yard
Three-coat work ..... 45c per yard
Cold Water Painting ..... 12c per yard
Whitewashing ..... 4c per yard
Turpentine, 75c per gal., in 5 gal. cans, and 65c per gal. in drums.
Raw Linseed Oil—$1.02 gal. in bbls.
Boiled Linseed Oil—$1.05 gal. in bbls.
Medusa Portland Cement Paint, 20c per lb.

Carter or Dutch Boy White Lead in Oil (in steel kegs).

	Per Lb
1 ton lots, 100 lbs. net weight	11¾c
500 lbs. and less than 1 ton lots	12c
Less than 500 lb. lots	12½c

Dutch Boy Dry Red Lead and Litharge (in steel kegs).

1 ton lots, 100 lb. kegs, net wt.	11¾c
500 lbs. and less than 1 ton lots	12c
Less than 500 lb. lots	12½c

Red Lead in Oil (in steel kegs)

1 ton lots, 100 lb. kegs, net wt.	12¼c
500 lb. and less than 1 ton lots	12½c
Less than 500 lb. lots	13c

Note—Accessibility and conditions cause wide variance of costs.

Patent Chimneys—

6-inch	$1.25 lineal foot
8-inch	1.75 lineal foot
10-inch	2.25 lineal foot
12-inch	3.00 lineal foot

Plastering—Interior—

	Yard
1 coat, brown mortar only, wood lath	$0.75
2 coats, lime mortar hard finish, wood lath	.80
2 coats, hard wall plaster, wood lath	.85
3 coats, metal lath and plaster	1.30
Keene cement on metal lath	1.30
Ceilings with ¾ hot roll channels metal lath	.75
Ceilings with ¾ hot roll channels metal lath plastered	1.50
Single partition ¾ channel lath 1 side	.85
Single partition ¾ channel lath 2 sides 2 inches thick	1.50
4-inch double partition ¾ channel lath 2 sides	1.30
4-inch double partition ¾ channel lath 2 sides plastered	3.00

Plastering—Exterior—

	Yard
2 coats cement finish, brick or concrete wall	$1.00
2 coats Calaveras cement, brick or concrete wall	1.35
3 coats cement finish, No. 18 gauge wire mesh	1.50
3 coats Calaveras finish, No. 18 gauge wire mesh	1.75

Wood lath, $7.50 to $8.00 per 1000.

2.5-lb. metal lath (dipped)	.17
2.5-lb. metal lath (galvanized)	.20
3.4-lb. metal lath (dipped)	.22
3.4-lb. metal lath (galvanized)	.28

¾-inch hot roll channels, $72 per ton.
Finish plaster, $18.90 ton; in paper sacks.
Dealer's commission, $1.00 off above quotations.
$13.85 (rebate 10c sack).
Lime, f.o.b. warehouse, $2.25 bbl.; cars, $2.15
Lime, bulk (ton 2000 lbs.), $16.00 ton.
Wall Board 5 ply, $50.00 per M.
Hydrate Lime, $19.50 ton.

Plasterers Wage Scale	$1.25 per hour
Lathers Wage Scale	1.25 per hour
Hod Carriers Wage Scale	1.10 per hour

Composition Stucco—$1.80 to $2.00 sq. yard (applied).

Plumbing—
From $70.00 per fixture up, according to grade, quantity and runs.

Roofing—
"Standard" tar and gravel, $6.50 per sq. for 30 sqs. or over.
Less than 30 sqs. $7.00 per sq.
Tile, $20.00 to $35.00 per square.
Redwood Shingles, $8.00 per square in place.
Copper, $16.50 to $18.00 per sq. in place
Cedar Shingles, $9.00 sq. in place.
Recoat, with Gravel, $3.00 per sq.
Asbestos Shingles, $15 to $25 per sq. laid.
Slate, from $25.00 to $60.00 per sq. laid according to color and thickness.

Sheet Metal—
Windows—Metal, $1.75 a sq. foot.
Fire doors (average), inclucing hardware $1.75 per sq. ft.

Skylights—(not glazed)
Copper, 90c sq. ft. (flat).
Galvanized iron, 30c sq. ft. (flat).
Vented hip skylights 60c sq. ft.

Steel—Structural
$110 ton (erected), this quotation is an average for comparatively small quantities. Light truss work higher. Plain beams and column work in large quantities $80 to $90 per ton cost of steel average building, $95.00.

Steel Reinforcing—
$80.00 to $120.00 per ton, set.

Stone—
Granite, average, $6.50 cu. foot in place.
Sandstone, average Blue, $4.00, Boise $3.00 sq. ft. in place.
Indiana Limestone, $2.80 per sq. ft. in place.

Store Fronts—
Copper sash bars for store fronts, corner, center and around sides, will average 75c per lineal foot.
Note—Consult with agents.

Tile—Floor, Wainscot, etc.—(See Dealers)
Asphalt Tile—18c to 28c per sq. ft. installed.

Venetian Blinds—
40c per square foot and up. Installation extra.

THE BUILDERS' EXCHANGE OF SAN FRANCISCO STANDARD WAGE SCALE

For mechanics employed on construction work in the Bay Region. Effective September 1, 1937

CRAFT	Journeymen Mechanics
Asbestos Workers	$ 8.00
Bricklayers (6h-5d)	10.50
Bricklayers' Hodcarriers (6h-5d)	6.75
Cabinet Workers (Outside) (5d)	8.00
Caisson Workers (Open)	6.40
Carpenters (8h-5d)	9.00
Cement Finishers (8h-5d)	9.00
Cork Insulation Workers (8h-5d)	9.00
Electric Workers (8h-5d)	11.00
Electrical Fixture Hangers	8.00
Elevator Constructors	10.40
Engineers, Portable & Hoisting	9.00
Glass Workers (8h-5d)	9.68
Hardwood Floormen	9.00
Housesmiths, Architectural Iron (Shop) (8h-5d)	9.00
Housesmiths, Architectural Iron (Outside) (8h-5d)	10.00
Housesmiths, Reinforced Concrete or Rodmen (8h-5d)	10.00
Iron Workers (Bridge and Structural) Including Engineers (8h-5d)	12.00
Laborers, Building (8h-5d)	$ 6.00
Laborers, Common (8h-5d)	6.00
Lathers, Channel Iron (6h-5d)	9.00
Lathers, All Others	9.00
Marble Setters (8h-5d)	10.50
Marble Setters' Helpers (8h-5d)	5.00
Millwrights	9.00
Model Makers ($1.50 per hr-6h)	9.00
Modelers ($2 per hr-6h)	12.00
Model Casters	7.20
Mosaic and Terrazzo Workers (Outside)	9.00
Painters (7h-5d)	8.50
Painters, Varnishers and Polishers (Outside)	9.00
Pile Drivers and Wharf Builders	9.00
File Drivers' Engineers	10.00
Plasterers (6h-5d)	9.00
Plasterers' Hodcarriers (6h-5d)	7.50
Plumbers (8h-5d)	11.00
Roofers, Composition (8h-5d)	9.00
Roofers, All Others (8h-5d)	8.00
Sheet Metal Workers (8h-5d)	10.00
Sprinkler Fitters	10.00
Steam Fitters (8h-5d)	$11.00
Stair Builders (8h-5d)	9.00
Stone Cutters, Soft and Granite (8h-5d)	8.00
Stone Setters, Soft and Granite	12.00
Stone Derrickmen	9.00
Tile Setters (8h-5d)	10.50
Tile Setters' Helpers (8h-5d)	6.50
Tile, Cork and Rubber (8h-5d)	9.00
Welders, Structural Steel Frame on Buildings	11.00
Welders, All Others on Buildings	9.00
Dump Truck Drivers, 2 yards or less	6.00
Dump Truck Drivers, 3 yards	6.50
Dump Truck Drivers, 4 yards	7.00
Dump Truck Drivers, 5 yards	7.00
Dump Truck Drivers, 6 yards	7.50
Truck Drivers of Concrete Mixer Trucks:	
2 yards or less	6.50
3 yards	7.00
4 yards	7.50
5 yards	7.50
6 yards	8.00

GENERAL WORKING CONDITIONS

1. Eight hours shall constitute a day's work for all crafts except as otherwise noted.
2. Plasterers' Hodcarriers, Bricklayers' Hodcarriers, Roofers' Laborers, and Engineers, Portable and Hoisting, shall start 15 minutes before other workmen, both at morning and at noon.
3. Five days, consisting of not more than eight hours a day, on Monday to Friday inclusive, shall constitute a week's work.
4. Transportation costs in excess of twenty-five cents each way shall be paid by the contractor.
5. Overtime shall be paid as follows: For the first four hours after the first eight hours, time and one-half. All time thereafter shall be paid double time. Saturdays (except Laborers), Sundays and holidays, from 12 midnight of the preceding day, shall be paid double time.
6. On Saturday, Laborers shall be paid straight time for an eight-hour day.
7. Where two shifts are worked in any twenty-four hours, shift time shall be straight time. Where three shifts are worked, eight hour's pay shall be paid for seven hours on the second and third shifts, allowing one-half hour for lunch.
8. All work, except as noted in paragraph 9, shall be performed between the hours of 8 a.m. and 5 p.m.
9. In emergencies, or where premises cannot be vacated until the close of business, men then reporting for work shall work at straight time. Any work performed on such jobs after midnight shall be paid time and one-half up to four hours of overtime and double time thereafter, provided, that if a new crew is employed on Saturdays, Sundays or holidays which has not worked during the five preceding days, such crew shall be paid time and one-half.
10. Recognized holidays to be: New Year's Day, Decoration Day, Fourth of July, Labor Day, Admission Day, Thanksgiving Day, Christmas Day.
11. Men ordered to report for work, for whom no employment is provided, shall be entitled to two hours' pay.

CONCRETE INDUSTRIES TO MEET IN CHICAGO NEXT MONTH

MODERN concrete construction, products manufacturing and merchandising methods will be put under the microscope when four concrete industries hold their conventions simultaneously during the week of February 7 to 11 at Chicago.

Program committees for the American Concrete Contractors Association, National Concrete Masonry Association, National Cinder Concrete Products Association, and the Cast Stone Institute have engaged recognized leaders in every branch of their industries to discuss and demonstrate the latest developments in building and selling concrete structures.

In conjunction with the conventions, a Concrete Industries Exposition is to be held wherein manufacturers will exhibit and demonstrate the newest machinery, equipment and materials used in concrete work.

Beginning with an explanation of how the U. S. Housing Act of 1937 will operate, speakers emphasizing housing will analyze markets, outline effective selling plans, and describe developments in the construction of reinforced concrete and concrete masonry houses. These talks have been aimed to provide information which builders and manufacturers can use to make their own work better and more profitable. Directly related to these subjects will be the talk, "Today's Building Costs and Building Values," which will be presented by Bernard Johnson, Editor of the American Builder magazine.

Concrete products manufacturers then will get their side of the housing story from the paper, "The Housing Market—Fitting Our Products to That Market." Whereupon Albert E. Bill, well known Detroit concrete house builder, will develop the practical side of building with concrete masonry by describing his successful experience in his talk, "The Firesafe Concrete House as a Profitable Enterprise for the Operative Builder."

The construction of reinforced concrete houses, which have increased in popularity during the last few years, will be no secret after engineers and builders get through explaining the details of methods being used today. Advancements in the whole field will be described in the paper, "Recent Developments in Reinforced Concrete House Construction." Arthur E. Jordan, prominant midwestern builder, will reveal facts and figures from his housing work in a talk on, "What I Learned About Building Reinforced Concrete Houses."

The question of concrete finishes has created so much interest that the concrete contractors' committee has scheduled a series of talks and demonstrations covering the wide variety of treatments that are possible. In the coloring of concrete, the actual process of staining, spraying and integral and dust-on coloring will be demonstrated by specialists in this field. The various textures that can be worked and built into concrete surfaces also will be described.

The application of ready-mixed concrete to the work of the concrete contractor is slated for discussion as is the subject of vibration which will be demonstrated to show what it is and what it does to increase the density of the finished concrete.

The subject of more effective selling will be covered by the talk, "A Selling Plan for Concrete Contractors," to be given by Ralph Condo, New Jersey contractor.

Important to the concrete products industry are the problems of insurance rates on concrete masonry structures, a question that P. M. Woodworth, engineer and housing consultant will take up in his paper on "Do We Need More Equitable Fire Insurance Rates on Concrete Masonry Construction?" This, however is only one of many similar topics that will be discussed in the concrete products sessions. "The Need of Standardized Textures for Concrete Masonry Units," "What Stock Sizes Are Necessary to Properly Service a Concrete Masonry Job," and "The Use of Reinforcement In Concrete Masonry Construction," are a few of the other pertinent questions to be brought into discussion by leading concrete products men. Steam and electrical curing also will be discussed during the sessions to be devoted to the manufacture of concrete products.

NEW BROADWAY TUNNEL

[Concluded from Page 53]

each of a 22-foot clear roadway between curbs, with a three-foot sidewalk on one side, with a 26-foot 8-inch clearance wall to wall, with a 15-foot 8-inch ceiling height. The inner walls of the two bores are separated approximately 15 feet at the two portals, but diverage to a maximum of about 100 feet under the crest of the mountain. The total covered length of the east-bound bore is 3203, and that of the west-bound bore, 3135 feet.

Easy light transition is provided by the construction of an overhead louver section, supported upon the portal approach walls, about 200 feet in length at either end.

These overhead louvers prevent direct rays of sunlight from falling upon the roadway area, and provide a lighting of intermediate intensity between the direct sunlight outside and the artificial illumination inside the tunnel bores.

New Concrete Products Plant at Napa, California

THE very latest in concrete products manufacturing is envisioned in this new plant just completed near Napa, California, by Basalt Rock Company, producers of "Basalite" a light-weight, nailable, insulating concrete which is fabricated into a complete line of building products.

The Basalt Rock Company, firm in the belief that by developing concrete products of unusual qualities, and foreseeing the demand for more permanent and economical building materials, began several years ago in a modest way to manufacture precast building units made of a natural cellular, light-weight, mineral aggregate in combination with Portland cement. This type of aggregate has been in common use for many years in the manufacture of concrete building materials in Germany and today is a business of major importance. In view of this, Mr. Streblow, president of the company, made a trip to Europe to personally see what was being done over there.

Recognizing the need for scientific control of manufacturing processes, and the elimination of crude and uncertain manufacturing methods which have been a hindrance to a more universal use of prefabricated concrete, the Basalt Rock Company has installed in this new plant, automatic equipment of the latest design. This equipment will not only give the complete assurance of high standards of quality but also greatly increase the production capacity of the company so as to meet the increasing demand for concrete products in buildings of all kinds.

Among the wide variety of buildings already constructed of Basalite are homes (ranging in price from $2,000 to $50,000), apartment houses, stores, factories wineries, dehydrators, cold storage plants, etc., and is an indication of the demand already created and the diversified uses of Basalite.

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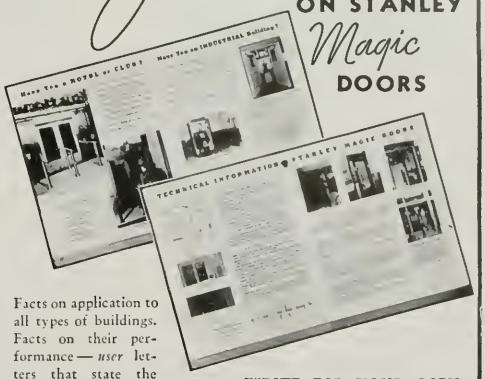

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FIFTY YEARS OF SERVICE

For one of the pioneer building industries in California, the outstanding event of the Christmas holidays was a complimentary dinner to H. F. Hedrick, plant superintendent of the Judson Pacific Company and who has been identified with either the old Pacific Rolling Mills or the Judson Company for half a century. Forty-two associates and fellow workers gathered around the festive board to pay tribute to the man who has given 50 years of loyal service to his employers. Of the 42 who were present it was pointed out that each had enjoyed an average length of service with the company of 20 years.

Tom Rolph, brother of the late Governor Jas. Rolph, Jr., officiated as master of ceremonies. The company's Christmas gift to Mr. Hedrick was a trip to Europe with the wife. They will be absent about three months.

CHRISTMAS PARTY

The American Society of Draftsmen, Los Angeles Chapter, held an enjoyable Christmas party Monday, December 20, at 6 p. m. at Van's Cafe, Ninth and Hill Streets, Los Angeles, for the benefit of "Kiddie Home", an orphanage on North Avenue 66. A film obtained through courtesy of the Union Oil Company was shown. C. J. Wolentarsky had charge of the arrangements.

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LEAKY BRICK WALLS

Anent leaky brick walls, causes and corrections, [see also Architect and Engineer for January, 1937], the following is from Real Estate and Building Management Digest:

Condensed from Brick & Clay Record:

"Brick walls of equal thickness resist moisture penetration in proportion to quality of masonry work. Tests by U.S. Bureau of Standards show no leakage through walls of best workmanship. This calls for joints well filled with mortar. On buildings without adequate inspection, masons are apt to slack inside joints, using no more mortar than needed for mere acceptable appearance. Such walls are penetrated by water in measurable amounts, the mortar joints forming the channels. Non-absorbent bricks do not stop this penetration. Bricks of low absorption and poor workmanship show greatest leakage. Any moisture in walls of first-class masonry work goes by capillarity through the brick. Porous bricks may absorb rain water so it does not run down on the inside wall, especially if mortar work is good. Harder bricks poorly mortared allow leakage through joints, the water sometimes running a long way inside the building."

A TROPICAL ENGINEERING FAIR

The reclamation of tropical areas is recognized as one of the greatest engineering problems of the world today. If the ingenuity displayed in making cold countries comfortable was directed to making the tropics livable and productive, the problem of overcrowding the earth would be solved. To illustrate the progress along these lines, a special Tropical Engineering Fair is being organized. It will include large scale displays and demonstrations of all forms of machinery, tools, apparatus, and appliances, together with chemical and pharmaceutical products, suitable for tropical climates. There will be tropical houses, building units and materials, refrigerating and cooling devices, as well as soil tilling machines and apparatus designed for developing the tropics.

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The fair will be attended by representatives of tropical countries prepared to purchase raw materials from overseas in barter for industrial finished products. The unique display, occupying several acres in and out of doors, will be a feature of the Leipzig Fair held from February 28th to March 8th, inclusive.

LEIPZIG FAIR DATES ANNOUNCED

The historic Leipzig Trade Fair will hold its 1,979th session from March 6th to 14th. To accommodate new exhibits two halls, with over 200,000 square feet of display space, will be added to the fifty-one exhibition halls heretofore in use. The Spring Fair will include some 10,000 exhibits of every industrial and art product assembled from twenty-one countries including the United States. An attendance of over 250,000 business men, attracted from seventy-four countries in all parts of the world, is assured. The entire exhibition space of several of the great Fair halls was sold out in September, indicating a substantial increase in world trade.

SCHOOL CLASSROOM LIGHTING

Average illumination in school classrooms throughout the country is only 20 per cent as high as it should be, according to figures reported to Edison Electric Institute by lighting bureaus representing all sections of the United States.

The existing lighting in all classrooms covered by the survey averaged four footcandles, the reports show, although lighting engineers and experts on seeing recommend at least twenty footcandles of light as the minimum artificial illumination for the schoolroom.

Examples of what has been accomplished to correct this condition in individual instances are given in the reports. At Sandusky, Ohio, every room in the entire school system has been relighted following a trial installation in a single room, used by the Sight Saving Class for children with serious defects of vision. The room was relighted and repainted. Venetian blinds were installed, divided so that upper and lower halves of the windows could be shaded indepen-

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dently. Illumination was increased to 37 footcandles, and provision was made both for manual and photo-electric control, so that the lights are turned on automatically when the light outside grows dim in case the teacher does not operate the switch.

The success of this test resulted in the relighting of all the rest of the 134 classrooms in the entire school system. Illumination in the classrooms has been increased from five to twenty times the former levels, and the minimum classroom lighting is now fourteen footcandles. A light meter is mounted on the far wall of every room, as a scientific guide to the need for turning on the lights. Special lighting is provided for such activities as sewing, manual training, art work, bookkeeping and typewriting.

In Tuscambia, Alabama, school authorities conducted an extensive experiment to determine the advantages of improved lighting to the pupils in the local schools. Two groups of children were selected, 34 pupils in each group, all in the same class with equally high grades, so that the groups were as nearly equal as possible. To further equalize conditions, the teachers of the two groups were switched back and forth at intervals, so that each group of children had the same instruction, and all conditions were equal except that of lighting.

In the classroom used by one group no change was made in the existing lighting. The other room was relighted according to modern standards. At the end of three years there were eleven failures among the group in the classroom which had not been lighted. In the other room there were only two failures.

A similar experiment at Mount Lebanon, Pennsylvania, showed that children in a well-lighted room showed 28 per cent more improvement than those in a poorly lighted classroom.

Where old school buildings have been relighted and redecorated within the past few years, and lighted in accordance with the lighting standards accepted at the time the new installations were made, the survey discloses that the average intensity

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amounts to ten footcandles. This figure has been accepted as adequate until within the past two or three years, but is no longer accepted by competent authorities. Recent installations of schoolroom lighting covered by the survey show 30 or more footcandles of illumination in a number of cases, pointing unmistakably to present trends among school and health authorities to safeguard and conserve the eyesight of growing children.

PULSE OF THE READER

[Concluded from Page 12]

Some ceilings may be vaulted—(straps ¾" x 2" bent against rafters).

Every place where humans stay should have a continuous supply of fresh tempered air they breathe. The purest air is well above ground. Warmed air in rooms goes to the top as fast as it can get there. Why not connect these facts directly? Take in air at the roof, warm it by gas heater, then FAN it into CEILINGS by short ducts.

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San Diego, Dec. 11, 1937.

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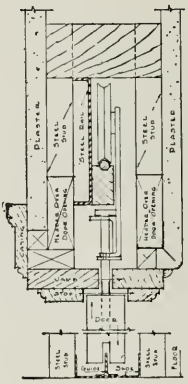

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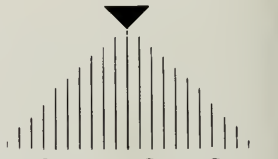

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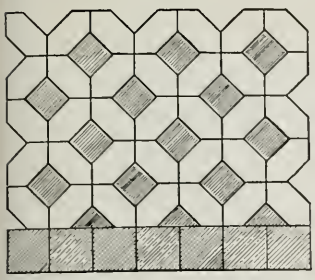

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NOTES AND COMMENTS

[Concluded from Page 2]

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* * *

To promote higher education in architecture, the American Institute of Architects will award Edward Langley scholarships in 1938 for advanced study, research, and travel, it is announced by Charles D. Maginnis of Boston, President of the Institute.

The grants, which will be limited to ten, with no stipend exceeding $1,500, are open to architects, architectural draftsmen, graduate students and teachers of architecture in the United States and Canada. Established in 1936 by the estate of the late Edward Langley, architect of Scranton, Pa., and a native of Canada, the scholarship fund aggregates $104,000.

Architects may propose any other architects or architectural draftsmen as candidates for the awards to the Regional Director of the Institute (Albert Evers of San Francisco is the California Regional Director). Scholarships will be bestowed according to the character, ability, need and purpose of each candidate. The Regional Directors may ask any candidate to submit examples of his work and to appear before them or their representative.

"To avoid unnecessary disappointment, a candidate should not be suggested unless his qualifications are outstanding and it is evident that the profession will be benefited by an award to him," the announcement says. Proposals will be received until March 1, 1938.

Graduate students and teachers of architecture who wish to apply for the scholarships must be proposed by the faculty or head of architectural schools approved by the Institute to the Institute's Committee on Education, of which Dean William Emerson of Massachusetts Institute of Technology is chairman. Final awards, determined by the Institute's Investment Committee from nominations submitted by the Regional Directors and the Committee on Education, will be announced about June 1.

The Investment Committee of the Institute, which makes the final selection, consists of Edwin Bergstrom of Los Angeles, chairman, Albert J. Evers of San Francisco and William G. Nolting of Baltimore.

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Repeal of the surtax on undistributed profits of industrial corporations by Congress is asked by the officers and board of directors of the American Institute of Architects in a petition to President Roosevelt and members of the United States Senate and House of Representatives.

"The effect of this tax is to place an extraordinary additional cost on building construction and other improvements desired by these corporations," declares a resolution adopted by the directors of the Institute.

"The claimed motive for this tax is to increase the income of the government, instead of which the actual results are to lessen the income because of the stifling effect on the earnings of the buildings construction industry and the so-called capital goods industries."

* * *

The completion of the Columbia Basin project in Eastern Oregon will bring about, in the next 25 to 50 years, the establishment of 25,000 to 40,000 new farm homes on desert land, much of which was homesteaded 30 years ago, only to be abandoned after a few years when droughts made dry-farming in much of central Washington impracticable. Farms and towns in the reclaimed area are expected to provide homes and employment for 200,000 to 400,000 people.

An act passed by the 75th Congress limits the area that may be held by an individual in the project area to 40 acres, with 80 acres for a man and wife. It also limits the price at which land may be sold to settlers if it is to receive water from the project.

The power plant at Grand Coulee will be developed as markets for its output develop. The ultimate installation will include, in each of the two power-houses, nine turbines rated at 150,000 horsepower each, and as many generators, each rated at 120,000 kilovolt-amperes. These will be, by far, the largest units of their kinds in existence.

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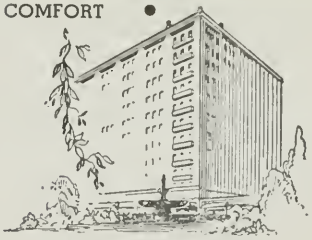

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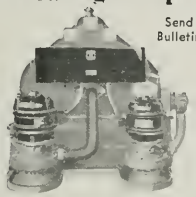

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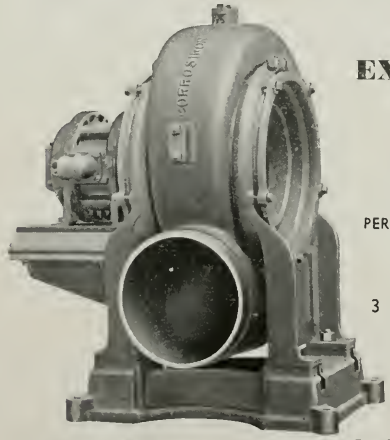

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Lewis P. Hobart, Architect

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ANNOUNCEMENT

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- A series of three articles explaining the 1938 amendment to the National Housing Act will start in the March issue of The Architect and Engineer.

- The first article will consist of an authentic outline of the new F.H.A. insured mortgage system of home financing. The second will concern the new F.H.A. modernization plan, and the third of the series will take up the subject of financing multi-family dwellings under 20 year insured mortgages.

- These articles will be written by an official of the Federal Housing Bureau and should be of great informative value to readers of this magazine.

The exhibit areas of the various states and territorial possessions of the Union in the New York World's Fair, 1939, will be grouped according to the three principal cultural influences which existed on the North American continent when George Washington was inaugurated President and the colorful architectural pattern of the zone will be divided into Georgian, French and Spanish styles of the time.

While the colonial grouping has been devised for the benefit of the states, there is nothing compulsory, as each state is free to choose its location according to available space in any of the three sections, namely, English, French and Spanish.

In this eleven-acre portion of the main exhibit section, the natural advantages and industrial achievements of the guest states and territories will be shown amid quaint surroundings in authentic colonial atmosphere, beautified with artistic buildings, mirror pools, quiet walks, sculptures, trees, hedges, lawns and flowers.

Fifty-two flags, including those of the forty-eight states, three territories and the Federal government, with Old Glory dominating the many-hued patriotic ensemble, will provide a gay parade of color along the main lagoon of the central court.

The Atlantic seaboard states and other states which derived their architectural domination from the seaboard states, will be offered choice of exhibit space in the English portion in the Court of State Buildings. This zone will be distinctively Georgian and Colonial with typical white colonnades, rigidly simple architectural lines, short-cropped lawns, precisely trimmed hedges and stately American elms.

The Mississippi Valley states and other states which derived their architectural domination from the Mississippi Valley states, will be offered choice of exhibit space in the French portion in the Court of the State Buildings. This will provide a lively contrast to the more somber English area. Fanciful cast iron grillwork, lovely shaded porches, green vines, canopied walks, ornate metal fences and widespread white willows will create an atmosphere retained even today by the older districts of New Orleans.

Southwestern states and other states which derived their architectural domination from these states, will be offered choice of exhibit space in the Spanish portion of the Court of the State Buildings. Appropriately, color will run riot in this section. The buildings will be an American interpretation of Spanish baroque architecture, examples of which are still found among the California missions with bright tile roofs, arches, fountains, luxuriant flower beds, sun dials and benches.

* * *

An alliance between the private architects and the Civil Service architectural organization, is suggested by the New York Chapter of the American Institute of Architects in a statement disclaiming hostility to the merit system governing employes in the public service.

In advocating the selection of architects for public works by open competition, the architectural profession has been accused of attacking the merit system. The contention is made that the public interest is better served by Civil Service workmen because work is done by them at a lower cost to the Government than under the guidance of the private architect.

"We do not believe the contention can be substantiated," declares the statement, made public by the New York Chapter's Committee on Public Information, of which Wesley S. Bessell of 16 East 52nd Street, New York City, is chairman. "Cost is a very debatable question. Costs under Civil Service have never been made public, nor are they available to the architectural profession, while the schedule of fee charges of the American Institute of Architects is available to everyone. If the authorities will place before us the exact costs of any given project, this question can then be answered.

* * *

"Another contention made is that the private architect does not pay a living wage to his draftsmen. This is absolutely untrue, as is proved by the fact that during good times the average draftsman preferred to work in the office of the private architect rather than that of the Government bureau, and only took Civil Service employment when the private architect was unable to make a living himself. Even today, the Civil Service ratio of salaries is lower than that which the private architect is still paying.

"One of the objectives of the American Institute of Architects in fostering the competition idea is to offer to the Government its best available talent by a fair method of selection instead of having the selection made through political favoritism or bureaucratic domination.

"There is no reason why the talent which is available throughout the private architectural field should not be allied with the Civil Service set-up, through a cooperative system. It is wrong to assume that the American Institute of Architects has attacked, or even criticized, the merit system of Government employes."

[Please turn to page 73]

CALIFORNIA COLONIAL HOMES
painted with
CABOT'S DOUBLE-WHITE
have won frequent Honor Awards from architectural juries

CABOT'S DOUBLE WHITE

is a wonderfully brilliant flat, waterproof white without being harsh or hard . . . suitable for all kinds of surfaces, including wood, brick, plaster, stucco or cement.

●

GUNN, CARLE & CO.
San Francisco
20 Potrero Ave. UNderhill 5480

LIGHTING & VENTILATION 100% EFFICIENT

Classroom unit, McClatchy Senior High School, Sacramento. Starks & Flanders, Architects.

This impressive new $800,000 high school is fully equipped with DONOVAN AUTOMATIC AWNING TYPE WINDOWS, for 100% natural ventilation and day-lighting control.

UNIVERSAL WINDOW COMPANY

Berkeley, California

BUILDING TRENDS AND NEW DEVICES

HAT STORE LIGHTING

Lighting especially designed to display merchandise at its best, has been installed by the Wormser Hat Company in their stores at Atlanta, Minneapolis, Lawrence, Birmingham and Hammond.

This installation employs a new design providing direct lighting on the merchandise, together with general illumination directed from the ceiling. Decorative plastic louvers provide light ray cut-off so that the advantages of direct lighting are obtained without any of its objections.

With unit spacings of 12½ ft., 10 ft., 9 ft. and 8¾ ft. and a ceiling height of 13.4 ft., an average lighting intensity of 45 foot-candles is obtained with 300 watt lamps in the units. This unusually high level of lighting provides 16 foot-candles of lighting on the wall cases. The installation was designed and engineered by the Lighting Division of the Westinghouse Electric and Manufacturing Company.

NEW BUILDING MATERIAL

Glaze-Raize, a new British-made glazed concrete, is claimed to take mat, sand-blasted or luster finish in unlimited range of design and color, according to a writer in "Compressed Air Magazine." Sheets up to 6 ft. long are now practicable. This new surface is weatherproof, fireproof (tested to 2200 degrees F.), resistant to acid, crackproof and washable. It is suggested for all uses for which tile is now specified.

Manufacture on the job is not difficult or expensive as to plant, but the time required to put the plant in readiness for operation (six weeks) may prove an obstacle to the use of the material.

NEW FIRE FIGHTING METHODS

Modern industry, by the creation of special fire hazards, has made necessary the development of new technical methods of fire fighting, C. B. White, chemical engineer, told members of the Metropolitan Chapter of the American Society of Safety Engineers at a recent luncheon.

The complexity of problems growing out of the increased use of chemicals, the development of petroleum by-products, use of electric power, large manufacturing units and concentrations of populations, all have contributed to the situation confronting the fire protection engineers.

"Fifty years ago," Mr. White said, "fires were largely confined to simple, free-burning materials in houses, barns, small factories, granaries, and the like, and water in limited quantities could be counted upon to take care of practically all of these risks.

"But today even our fires in free-burning materials are apt to be of greater proportions than formerly because of the centralization of industry into larger units; but in addition we now have the oil and gasoline risks, the electrical hazard, the pyroxylin plastic risk and the fire hazard brought about by the introduction of scores of new solvents for all sorts of purposes.

"Probably water will always be the most common fire extinguishing agent because of its abundance. But water is not particularly under discussion in this talk because that which makes water a modern extinguishing medium is not the water itself but the means of its application.

"There are, however, certain types of fires which water will not extinguish; indeed there are certain types of fires which are greatly intensified and increased by water. Therefore, we must resort to other agents for many of the present day fires.

"There are four types of extinguishing materials developed in our laboratories for these special uses. The liquid vaporizing extinguisher is especially recommended for fires in automobiles, motor trucks, and is adapted for putting out fires in oils and greases and in electrical machinery. The chemical solution type is most efficient for fires in free burning materials such as wood, textiles, rubbish, etc. The foam extinguisher is highly recommended for two types of fire, those in free burning materials and those in oils and greases. The inert gas type of extinguisher is recommended for fires in electrical machinery and also for oil and grease fires and for automobiles, and motorboats."

FLOOR COVERING

Said to be the most advanced development in floor covering is Voorhees Air-Pad—a carefully processed combination of sheet rubber and sponge rubber. Due to its unique construction, the material combines the beauty and color-softness of rubber with remarkable resilience and quietness.

Standard construction is in continuous lengths, 6 feet wide and 3/16 inch thick. A variety of beautiful colors are available, making possible an infinite number of decorative treatments.

BOMB-RESISTANT BUILDINGS

Willard K. Smith, editor of "News and Opinion," recently advised architects to take heed of what is now happening in Shanghai and Madrid. Because in the event of war New York would not be invulnerable to aerial attacks, architects should consider the possibility of bombardment in designing new buildings for that city, Mr. Smith warns. In his article Mr. Smith advocates roof reinforcement for repulsion of explosives and as a mounting for anti-aircraft guns. How serious the matter would be in case of an aerial attack on the metropolis is borne out by the statement that few roofs now topping New York's skyscrapers could support such a gun, because its weight at recoil is 30,000 pounds.

English Agent—"Now, there is a house without a flaw!"

Customer—"My gosh, what do you walk on?"

Tle smartest trend in wall tiling since COLOR

New 6x9 MASTER KRAFTILE

HS new size in wall tile units marks a sub-atial step forward in modern design. Per-ni greater freedom of artistic expression ra has been possible in recent years with le of conventional size.

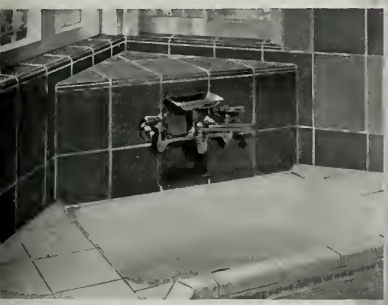
et Master Kraftile does not exceed the e of 4¼" tiling. And costs approximately 6% less than other large tile.

ew Master Kraftile's larger size makes it ier to handle and quicker to install. It be cut without difficulty to fit special sit-ons. Too, unnecessary shapes are not re-ired. Six in all will do an entire bathroom all-tile shower.

Next time, specify New Master Kraftile. more modern. It offers new originality in l effects. And like *all* Kraftile it's higher d than other tile . . . it cannot be sur-sed for the quality and hardness of its ze or its durability.

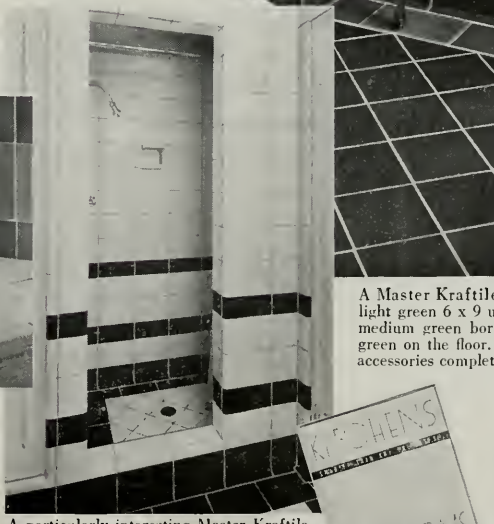
Write for complete specifications and mples. Kraftile Company, Niles, Calif.

Sweets: No. 11-5—Sec. 11, 5th Catalog

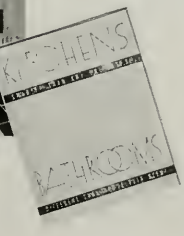


unusual corner window and sink using Master ftile. Notice how easily and effectively this 6 x 9 tile can be used for special situations

A Master Kraftiled bathroom using light green 6 x 9 units to door height, medium green border and base, dark green on the floor. And white Kraftile accessories complete this modern room



A particularly interesting Master Kraftile treatment for a modern all-tile shower. Here cream tiling with horizontal bands of black show off to splendid advantage how effectively 6 x 9 Master Kraftile makes the smallest room appear more spacious



Free copies of this beautiful folder will be sent you on request, for mailing to your clients to acquaint them with this new wall tile. It contains photographs of interesting installations, and detailed information about Master Kraftile

PULSE OF THE READER

THE TAXPAYER PAYS

Dear Editor:

The December issue of **The Architect and Engineer** has, on page 12, what purports to be an answer to my letter published in the "A. and E." last October, asking for an explanation of how the State of California, through its Public Works Department, erected two State Buildings, ". . . without cost to California Taxpayers," as published in your August issue (pp. 15 et seq.).

I am genuinely sorry and greatly disappointed that neither Mr. McDougall nor Gov. Merriam gives us any worth while information; for Mr. McDougall says now that these buildings were constructed without EXTRA cost to the California taxpayers. That's a whale of a difference. "Without cost," and "without extra cost" don't mean the same thing to me by a great deal. It would seem then that, after all, the California taxpayer footed the bills in the same old way, no matter how much disguised and sugar-coated through bookkeeping figures. Certainly, before the Department could sell any equity it must have paid for said equity through tax monies and the same source must supply the rental funds. That the rental charge, including operating expenses, ". . . will be considerably less than half the rate per square foot which normally would apply on buildings of the type of the new structure" may be readily challenged; for it stands to reason that if the State could show owners of competitive private buildings how to save 50 per cent on their operating costs said owners would not be slow to adopt such methods. As a matter of fact, such costs are usually higher under municipal, state or Federal operation. Incidentally, the same may be said of architectural services supplied by governmental agencies, from the Supervising Architect's office down.

Now let us suppose that these buildings are finally paid for, does it follow that we need no longer charge ourselves rent for them? Suppose a merchant has paid for his land and buildings, let us say $500,000, can he therefore sell goods at half the price charged by his competitor across the way who rents from someone? Not unless he can, like governing bodies, fall back on good, old John Taxpayer; for the cost of something for nothing is proverbially high.

When the City and County of San Diego move into their new administration building, now nearing completion, an outside rental charge of some $40,000 will be eliminated, but I am sure very few are harboring the delusion that we will ever after live rent free and that our operating and maintenance costs will be cut in half.

You must pardon me, Mr. Editor, for harping on what may seem a somewhat trivial matter, but when you consider the prominence given in your magazine to the misleading statements, giving the general public the impression that the California Public Works Department, and the Division of Architecture in particular, designs and erects buildings in so economical a manner that no architect in private practice may hope to match it, I feel it is time to enter a vigorous protest; in fact, I feel that the private architect has already been placed at a tremendous disadvantage by unfair State competition and that he deserves your active aid in playing up, editorially and otherwise the fact that neither the State Architect, nor anyone else can design and erect public buildings, "without cost to the taxpayer."

JOHN S. SEIBERT, Architect.
San Diego, Jan. 10, '38.

SIR EDWIN LUTYENS' WORK

Dear Editor:

The American Institute of Architects has given me your name, that I might enquire from you if you have published in your journal in recent years the building of the British Embassy at Washington by Sir Edwin L. Lutyens, B.A., of this country.

I am anxious to obtain particulars and illustrations of this building, as I am making a special study of this architect's work, and I should appreciate any assistance you could give me for this purpose.

Yours faithfully,
EDWARD BANKS.

London, England

P.S.—Kindly let me know the yearly rate for your journal that I may subscribe.

Editor's Note — The British Embassy building at Washington has never been illustrated in The Architect and Engineer. We are under the impression pictures of the building have appeared in the "Federal Architect," Washington, D. C.

NEW HOUSING ACT

Dear Editor:

We would appreciate it if you would announce in the next issue of "The Architect and Engineer" the fact that copies of California's State Housing Act containing the many important 1937 amendments are now available for distribution. However, in line with recent official instructions bearing on the distribution of public documents in general, the State Housing Division will no longer distribute copies of the Law free of charge as has been the practice heretofore. Those who are interested may secure copies of the Statute upon payment of a nominal fee by writing to the Supervisor of Documents of the Bureau of Printing, Sacramento, California.

California's Housing Act governs the construction and maintenance of hotels and apartment houses in all parts of the State and takes jurisdiction over dwelling houses in incorporated cities. Among other changes, the enforcement provisions of the Statute have been considerably strengthened and, under the present setup, the Division is authorized and empowered to prevent the construction of hotels or apartment houses outside of cities, or in rural or mountain areas, that are in violation of the Law or that would constitute shacks or fire traps, and this authorization will be freely used wherever necessary against unscrupulous builders who attempt to circumvent the provisions of the Statute, and who may operate in outlying districts where there are no Building Departments.

The latest publication of the State Housing Act contains a number of illustrations and drawings that will assist builders and others allied with the construction industry in working out their problems that deal with various phases of the Law.

Very truly yours,
L. T. MOTT,
Supervisor of Housing.
Los Angeles, Jan. 7, '38.

SAN FRANCISCO ARCHITECTURE

Dear Editor:

Enclosed is my check for three dollars. Please renew my subscription to "The Architect and Engineer" for another year.

Would I be "out of order" in asking that San Francisco be a little more conspicuous in future "A. and E." articles and plates?

Very truly yours,
R. W. ALBERS.
Santa Fe, N. M., Jan 12, '38.

LANGLEY SCHOLARSHIPS

Dear Editor:

Herewith is an announcement concerning the procedure for awarding the Edward Langley Scholarships in 1938.

It is the desire of The Institute, and of its Investment Committee which makes the awards, to get information concerning them before the entire architectural profession.

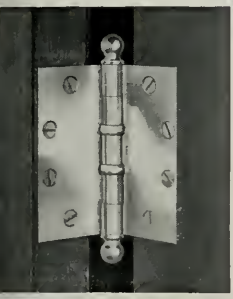
Therefore, it will be much appreciated if you can find it possible to print the announcement in an early

[Please turn to page 12]

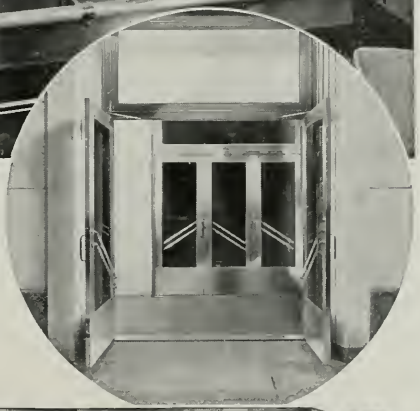
Everyone likes

U·S·S STAINLESS STEEL

CLIENTS like it because bars and pantries of U·S·S Stainless Steel are always gay and inviting. No beverage will ever tarnish them. Weber Showcase & Fixture Company of Los Angeles executed this attractive bar, using U·S·S Stainless for all bright metal parts.

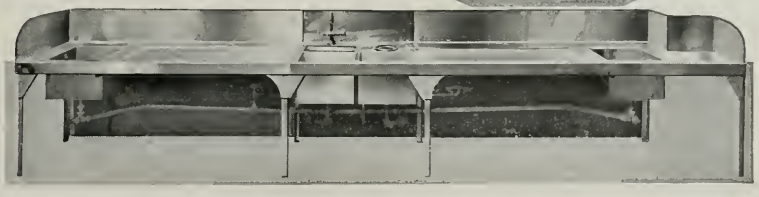


UILDING OWNERS like it because ainless steel is the only metal which capable of maintaining a brilliant rface with no protective coating. Its ng life and the ease with which it is eaned quickly liquidate the cost of ainless steel hardware. In hinges 'S·S Stainless offers an additional vantage—it wears less, keeps doors om sagging and having to be re-hung.



ARCHITECTS like it because it is practical as well as beautiful. Notice the simple beauty of this modernized building entrance which springs from the simple beauty of the stainless sheets. It keeps a building looking "brand new."

RESTAURANTS like it because cleanliness begets cleanliness—and it also builds patronage. This restaurant sink was made with U·S·S 18-8 Stainless Steel by Brandt Brothers in Spokane, Washington.



U·S·S STAINLESS STEEL

COLUMBIA STEEL COMPANY, *San Francisco, Distributors of USS Stainless Steel produced by*
AMERICAN STEEL & WIRE COMPANY, *Cleveland, Chicago, and New York*
CARNEGIE-ILLINOIS STEEL CORPORATION, *Pittsburgh and Chicago*
NATIONAL TUBE COMPANY, *Pittsburgh*
United States Steel Products Company, New York, *Export Distributors*

UNITED STATES STEEL

PULSE OF THE READER

[Concluded from page 10]

number of The Architect and Engineer.

As you will note, forms of proposal may be obtained from The Institute, and must be filed not later than March 1, 1938.

Sincerely yours,
E. C. KEMPER,
Executive Secretary.

Editor's Note: The official forms of proposal are as follows:

Proposals of all candidates must be made in duplicate on printed forms, which may be obtained from The American Institute of Architects, 1741 New York Avenue, Washington, D. C.

Group 1 Candidates

Any architect in the United States or Canada may propose any other architect or architectural draftsman as a candidate for an award in Group 1, but no one shall propose himself.

All proposals of candidates under Group 1 must be sent to the Regional Director of The American Institute of Architects who represents the district in which the proposer and the candidate reside, and must be in his office not later than March 1, 1938. The name and address of the Regional Director will be furnished with the printed forms of proposal.

From the proposals received by him, the Regional Director will nominate a prescribed number of candidates from his district to the Board Committee. The Director may request any candidate to submit examples of his work and to appear before him or his representative.

The faculty or head of any architectural school approved by The Institute may propose any teacher in any such school, or any graduate of such engaged in post-graduate work in the school or in travel, or any students about to graduate from the school, as a candidate for an award in Group 2, but no one shall propose himself.

Proposals of candidates from Group 2 must be sent to the Committee on Education, The American Institute of Architects, 1741 New York Avenue, Washington, D. C. and be in that office not later than March 1, 1938.

From the proposals received by it, the Committee on Education will nominate a prescribed number of candidates to the Board Committee.

The Board Committee will make its selection for awards from the candidates nominated to it by the Regional Directors from Group 1 and by the Committee on Education from Group 2.

CLEAN UP!

Dear Editor:

Honorable Angelo J. Rossi, Mayor of San Francisco, has named a Citizens Committee to promote the question of cleaning up and renovating San Francisco preparatory to the Worlds Fair.

Dr. Adolph E. Schmidt is Chairman of this Committee.

Dr. Schmidt has addressed our Builders' Exchange members on this very important subject and has asked us to give the matter the widest publicity. I hope all join in doing this. Tell it to your friends for naturally you can see a campaign of this kind means work for all, particularly our painter members.

Yours very sincerely,
W. H. GEORGE, President,
S. F. Builders' Exchange.

San Francisco,
January 26, 1938.

CORNELL FELLOWSHIP

Dear Editor:

I am enclosing two announcements which I hope may be of interest to you. One describes our Fellowships and Scholarships for the year 1938-39, the other concerns a continuation of the Summer Session in Architecture and Landscape Architecture which was started three years ago. Our experience in previous sessions indicates that this attempt to bring out forcibly the interrelation of the two professions is an idea worth developing. The faculty this year will be selected with a view of getting teachers of proven ability and who are enthusiastic about the program as outlined.

You will also note that this announcement includes information concerning the Summer work in Drawing and Painting.

We would appreciate having this published in either the March or April issue of your magazine if possible.

Yours very truly,
JOHN N. TILTON, JR.,
Acting Dean.

Cornell University,
Ithaca, N. Y.
January 24, 1938.

Editor's Note—A more detailed announcement of the Fellowship and Scholarships is published on another page in this issue.

GOOD NUMBER

Dear Editor:

The January number of The Architect and Engineer is one of the best we have noted this past year. It seems to me that some of our local architects have failed to appreciate the value of this publication, and that it compares very favorably with others devoted to architecture.

Cordially,
ERNEST E. WEIHE.

Bakewell and Weihe, Architects,
San Francisco, January 6, 1938.

HAVE YOU AN UNCOMPLETED PROJECT?

(Date Extended for Submitting Drawings)

Would you like to have us depart, in some particulars, from the customary way of publishing a monthly magazine?

If you could find somewhere, someplace, a bit of unusual design, to you a masterpiece in conception, yet for some reason an uncompleted project, would it interest you to have it published?

Almost every architect has had the experience of producing a dream in design which would be of interest to his fellow craftsmen.

THE ARCHITECT and ENGINEER proposes to depart from the usual way and invite architects, who care to contribute, to indulge in a bit of fanciful play for an Exhibit of Ideals. No new design is desired nor expected. You are to think back (but not too far back) over your professional career and pick out of your files the thing that interested you most and which you believe will add to the material wealth of good design for illustration. Due credit will be given the author.

The Architect and Engineer will devote one issue, early in 1938, to the publication of a selected number of these designs and may, from time to time, use others as frontispiece material.

Will you therefore deliver your selection in shape for reproduction to the offices of the State Association of California Architects, 1101 Citizens National Bank Building, Los Angeles, or 557 Market Street, San Francisco, for the Architect and Engineer, San Francisco. There your design will be judged, competently, and a prominent disinterested architect to be chosen as Guest Editor, will prepare appropriate comment when the material is published. Perspective and plan are desirable, photographs of originals preferred.

The response to this invitation has been extended to March 15. Please signify your intentions to Robert H. Orr at the Los Angeles address or Harris Allen at the San Francisco address.

Picture YOUR CLIENT...HAPPY...

...IN AN ALL-GAS KITCHEN LIKE THIS

"It's perfect; you've thought of everything." Such expressions by clients spell SUCCESS—and one of your most effective aids is modern kitchen planning. It provides *efficiency* through step-saving arrangement and use of modern appliances, plus *sparkling beauty,* a constant source of pride. ☆ Pacific Coast Architects lead the nation in transforming the kitchen from a workshop into a social asset. And, increasingly, they specify GAS *cooking, water-heating, refrigeration*—plus gas-fired automatic *heating* to round out a complete home-comfort-and-economy plan. ☆ Your Gas Company gladly places its technical data at your disposal and invites consultation with its engineers.

CALIFORNIA ARCHITECTS who recently have designed "All-gas" homes include . . . Los Angeles—Edgar Bissantz, Ralph C. Flewelling, Frank W. Green. ☆ ☆ San Francisco—Mark Daniels, Albert Evers, W. P. Day. ☆ ☆ Oakland—Earl R. MacDonald, Miller & Warneke; and many others

S

FUEL

House with Sunken Patio

GARDEN VIEW, RESIDENCE OF MR. AND MRS. A. M. PILINSKY, OAKLAND, CALIFORNIA
Earl R. MacDonald, Architect

THE problem of giving individuality and seclusion to the home of a modern young couple, adapting it to a steep lot, has been remarkably solved by Architect Earl R. MacDonald in a residence design for Mr. and Mrs. A. M. Pilinsky, Oakland, California.

A semi-modern type of Monterey, the house is of white cement plaster with hand-split shake roof and tile deck. It contains living room, dining room, kitchen, entrance and stair hall, recreation room, laundry, furnace room, master bedroom and bath, library, bed alcove and lavatory, besides a porch and roof deck, glass garden and garage.

A gas-fired hot air furnace, thermostatically controlled, has been planned into this home to supply comfortable temperatures at all times, quickly and automatically. The kitchen is equipped with the most modern type of range, and an automatic water heater provides ample hot water.

Special features of this unusually attractive home are the beautifully sunken patio, glass garden, and walnut library on the second floor.

Old Capitol a Museum

LOUISIANA'S old State Capitol Building, at Baton Rouge, which Mark Twain once called an "architectural monstrosity," is undergoing a face-lifting.

The Capitol was erected in 1847 along the lines of a Norman castle, with distinct touches of Moorish influence. In 1849, when the building was dedicated, Louisiana's early lawmakers read their documents by candle light. It wasn't until eight years later that a "modern gas lighting plant was installed."

It was here that the Legislature voted to secede from the Union.

Gov. Louis Alfred Wiltz began reconstruction of the quaint building in 1880.

The old Capitol Building was in use until 1932 when the seat of government in Louisiana was moved to the $5,000,000 skyscraper building on the opposite side of town. Since then the old building has been utilized mainly by emergency Federal agencies. It is practically in ruins. Most of it is completely nude of paint.

Great circular staircases are outstanding features of the old Louisiana State Capitol Building now being renovated by a group of Works Progress Administration employes. Replaced by a $5,000,000 skyscraper state office building, the old Capitol is being converted into a museum.

STARKS & FLANDERS
Architects

H. O. ADAMS
Tile Contractor

For the McClatchy High School Memorial Fountain the Architect successfully combined Tile and Polychrome Terra Cotta. The romance of California's early history is portrayed in a series of colorful tile panels. Shown in the picture are two scenes; one, of the Placer miners, and the other vividly portrays the covered wagon pioneers. The Terra Cotta top and Decorative Tile coping enhance the fountain's beauty of color and design.

GLADDING McBEAN & CO.

MANUFACTURERS OF CLAY PRODUCTS

SAN FRANCISCO PORTLAND LOS ANGELES SEATTLE SPOKANE OAKLAND VANCOUVER, B. C.

ARCHITECT'S PLOT PLAN OF ZOOLOGICAL GARDENS AND HERBERT FLEISHHACKER PLAYFIELD, SAN FRANCISCO

LEWIS P. HOBART, ARCHITECT

ZOOLOGICAL GARDENS AND FLEISHHACKER PLAYFIELD

by Sterling C. Carter

THE San Francisco Zoo and Herbert Fleishhacker Playfield was started by Mr. Fleishhacker in 1929, when, on his trip around the world, he collected animals and sent them to San Francisco to form a small nucleus out of which the present Zoo has developed.

It was possible in 1935, with the aid of Works Progress Administration money, to start a new zoo layout on 48 acres of land situated to the East and adjoining the original Zoo.

Design of the new Zoo is based on modern methods of using barless pits such as have been used abroad extensively since about 1900. Some of the buildings completed or now under construction are: 500 feet of bear dens, a flight cage measuring 220 feet, a monkey island, 2 small mammal dens, a lake for aquatic birds, lion house, the foundations for the elephant house, pools for otters or beavers, restaurant, plaza with a fountain, large basin with an island and a circular pool for turtles.

ZOO GROUNDS COVER MANY ACRES

The size of the new grounds and the scope of the present work is overwhelming when you compare it with the original Zoo. A large elephant contrasted to a small wolf will give a rough idea of the two sizes.

If you are an architect, you can appreciate what this $1,500,000 project has meant, and now means to Lewis P. Hobart, prominent San Francisco architect, in charge of the work. Mr. Hobart was architect of Steinhart Aquarium and the Academy of Science buildings in Golden Gate Park, both very interesting structures but offering less opportunity for the fulfillment of an architect's dream than the Zoo.

Before Mr. Hobart started preparing plans for the Zoo two years ago, he was privileged to visit the most important zoos in the United States, the largest and most modern of which are located in Chicago, Detroit, New York, Washington, D. C., St. Louis and San Diego. On this trip he learned many important and interesting facts pertaining to zoos, their construction, design, occupants.

CONCRETE USED FOR ALL BUILDINGS

The first important question considered in the zoo design was that of building material. It was found that the modern zoos were built strongly, that they were to be permanent, and that the cost of upkeep of buildings, paddocks, yards, pens, cages, etc., should necessarily be kept at a minimum, and that fire hazard should be eliminated. So reinforced concrete was selected as the building material for practically all of the construction. This included restrooms and miscellaneous other buildings not intended to house bird, reptile or beast.

One of the most important questions to be considered from the

PLOT PLAN AND KEY, ZOOLOGICAL GARDENS AND HERBERT FLEISHHACKER PLAYFIELD, SAN FRANCISCO

LEWIS P. HOBART, ARCHITECT

1—Main Entrance
2—Sloat Boulevard Entrance
3—Parking Space and Entrance
4—Central Plaza
5—Lion House
6—Lion and Tiger Yards
7—Bird House
8—Pachyderm House
9—Elephant and Rhino Yards
10—Future Hippo Yards
11—Primate House
12—Monkey Island
13—Lake for Aquatic Birds
14—Aquatic Bird Nests
15—Pumping Plant
16—Aviary for Aquatic Birds
17—Coypu Rat Pool
18—Bear Dens
19—Otter Pool
20—Tunnel to Future Zoo Extension
21—Future Zoo Extension
22—Paddocks
23—Goat Hill
24—Small Mammal Dens
25—Restaurant
26—Future Buildings
27—Directors' Building
28—Hospital
29—Service Building and Yard
30—Present Zoo
31—Children's Playground
32—Mothers' Building

Photo by Moulin

BEAR DEN, ZOOLOGICAL GARDENS AND FLEISHHACKER PLAYFIELD, SAN FRANCISCO

standpoint of the Zoo management was the one of providing quarters which would encourage breeding of the inmates. The young are one of the most fascinating attractions at a zoo.

Exposure of the various animals and birds to wind and sun was carefully considered in order to provide as natural a climate and home life for them as possible. The most important question to be considered from the viewing public's standpoint was that of providing as adequate and as complete a view of the animals as was possible without endangering life or limb of the onlookers.

PROVISIONS FOR FEEDING

The questions of feeding, handling and otherwise properly taking care of the inmates had to be given serious consideration. Sick inmates had to have care. Feeding and mating habits peculiar to various animals and birds had to be considered. For example, the giraffe must be fed from a high place as he does not feed from the ground.

All of these problems, and many others, have been solved very well; and especially in the case of the bears, cats, elephants, monkeys and miscellaneous other animals, from the viewing public's standpoint in particular, by building barless paddocks, or yards, of reinforced concrete. At a normal distance, it will appear that the animals are not confined at all, except for a pipe rail atop a low concrete curb. But upon arriving at the rail, a wide moat comes into view, the width and depth of which has been determined according to the animal's ability to

PUBLIC AMPLY SAFEGUARDED

Photo by Moulin

BEAR DEN, LOOKING TOWARD FLIGHT CAGE AVIARY, FLEISHHACKER ZOOLOGICAL GARDENS, SAN FRANCISC
Lewis P. Hobart, Architect

jump or climb. Where wet moats are used the depth of the water in t moat must be kept great enough to prevent the animal from jumpin.

The bears have a moat 15 feet deep with a set-back of 14 feet, whi is as far as a bear will attempt to jump. The artificial rock work is arranged that it will overhang at the top so that the bears will not clim out. Bears can go vertically no higher than they can reach.

"MONKEY ISLAND" OF ARTIFICIAL ROCK

The "monkey island," which is also built-up artificial rock, has moat filled with 3½ feet of water. While the monkeys enjoy swimmin they cannot jump out of water.

The lion house will have a large public space on the inside whe people may see the lions in their cages during feeding time. The outsid paddocks are similar to the bear dens. The moats for the lions and tige are 15 feet deep and 22 feet on the horizontal, from the wall to the pa dock. These moats can be filled with water or kept dry, as preferred b the keepers; they are interchangeable. Tigers like water but lions do no On the North side of this house are the regular cages for some of th smaller cats that are great jumpers.

SERVICE CORRIDOR FOR BEAR DENS

Most of the animal cages and sleeping quarters are built of 8 reinforced concrete, walls, floors and ceilings. Sliding doors, leadin from cages to yards, are provided with barred doors operated by r mote hand control. Feeding aisles are also of reinforced concrete.

Of special interest is the built-up imitation stone work which made to represent massive stones on the face of a rugged cliff. A ber

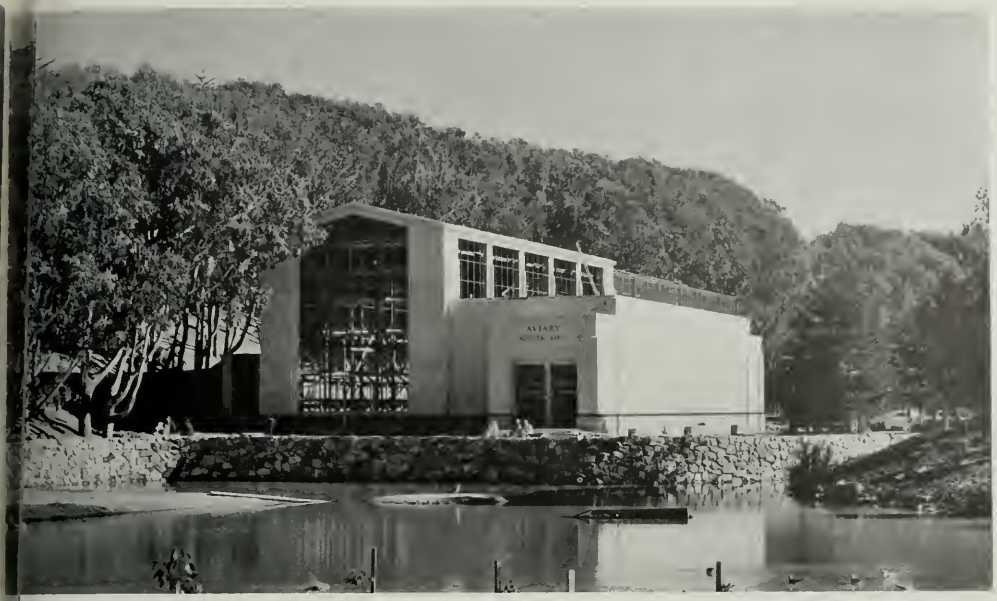
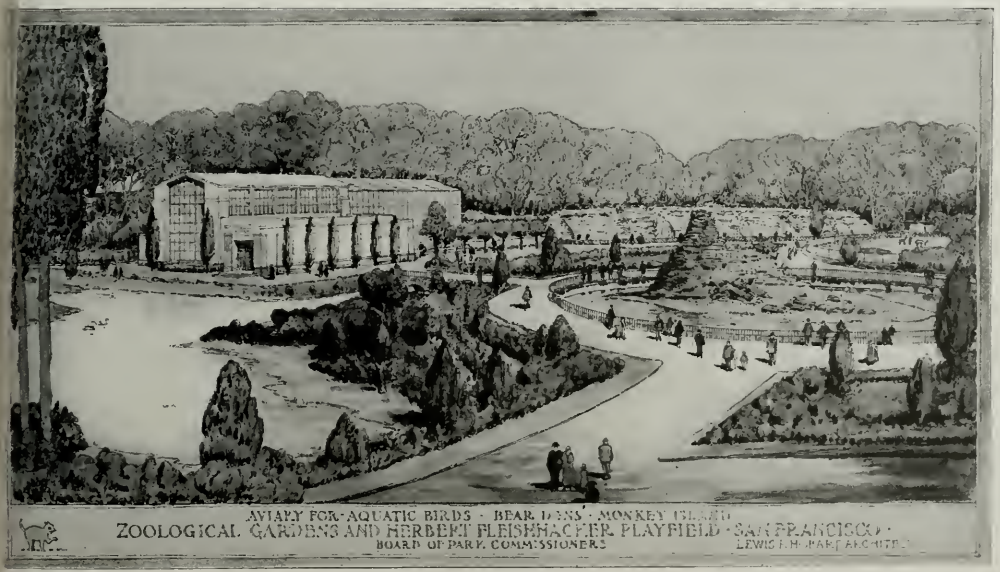


Photo by Moulin

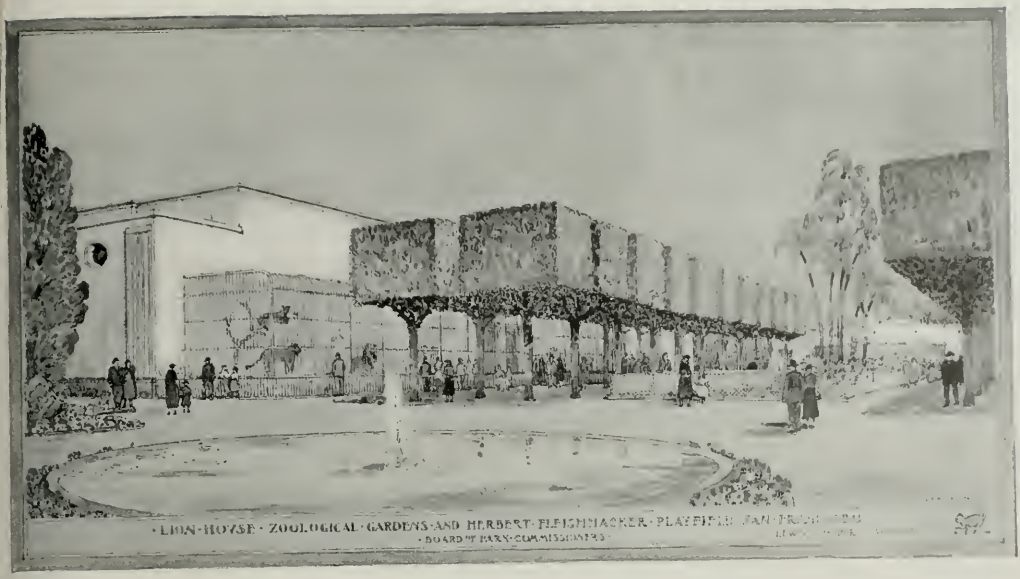
AVIARY FOR AQUATIC BIRDS, FLEISHHACKER ZOOLOGICAL GARDENS, SAN FRANCISCO

Lewis P. Hobart, Architect


AVIARY FOR AQUATIC BIRDS · BEAR DENS · MONKEY ISLAND
ZOOLOGICAL GARDENS AND HERBERT FLEISHHACKER PLAYFIELD · SAN FRANCISCO
BOARD OF PARK COMMISSIONERS

"MONKEY ISLAND," FLEISHHACKER ZOOLOGICAL GARDENS, SAN FRANCISCO
Lewis P. Hobart, Architect

PADDOCK BARN, FLEISHHACKER ZOOLOGICAL GARDENS, SAN FRANCISCO
Lewis P. Hobart, Architect


· LION · HOUSE · ZOOLOGICAL · GARDENS · AND · HERBERT · FLEISHHACKER · PLAYFIELD · SAN · FRANCISCO
· BOARD OF PARK · COMMISSIONERS ·

· PACHYDERM · HOUSE · ZOOLOGICAL · GARDENS · AND · HERBERT · FLEISHHACKER · PLAYFIELD · SAN · FRANCISCO ·
· BOARD OF PARK · COMMISSIONERS ·
LEWIS P. HOBART · ARCHITECT

LEWIS P. HOBART
ARCHITECT

galvanized heavy channel framework bolted together is covered with galvanized metal lath. Portland cement plaster is applied to this in several coats to resemble stone. The back side of all metal framework is then imbedded in concrete by the gunite process to prevent possible rusting of the metal, and to provide adequate strength and durability.

MONOLITHIC BIRD BUILDING

The aquatic bird building, which is located on the shore of one of the several beautifully made lakes, is constructed of reinforced concrete along harmonious lines. The simple but bold cornice and moulding have been cast in place, and are monolithic with the rest of the building. Honesty of construction in this and all buildings is well shown by leaving the exposed form marks both inside and out. Pleasing brush coat colors will be applied to the concrete walls.

The "flight cage" is 40 feet wide, 45 feet high and 220 feet long. A portion is enclosed for protection from the weather and lighted on the principle of the Aquarium, with the public in semi-darkness so that they may see the birds in a brilliant light. The outer open half of the flight cage is arranged with an outside ramp so that the spectators may be on a high level and look at the birds nesting. Down the center of the entire length of the interior there is a creek, fringed with palm trees and shrubbery.

What has been described is just the starting of the Zoo. Beside the present work, there is a pretentious program for the future. Thirty-eight acres across Skyline Boulevard to the east are available, and will probably be devoted entirely to paddocks of various kinds for hoofed animals and animals of the wolf family. The future layout contemplates barless pits throughout. A reinforced concrete tunnel is already provided under the highway connecting this 38 acres with the present 48 acres. The hope is that this entire program will be sufficiently completed before the opening of the Golden Gate International Exposition.

FUTURE DEVELOPMENT PLANNED

Not included in the present plans, but sorely needed on the 48 acres, are a bird house, a primate house, a reptile house, and a hill for mountain sheep. Space is available and has been set aside for all of these. A theater in the primate house will be a novelty. The audience, children of all ages, will stand and watch the chimpanzees go through simple acts such as eating at table, donning and removing wearing apparel, going to bed, and performing other simple and amusing acts. At zoos where there are such theaters, it is found that the chimpanzees seem to get as much enjoyment out of the acting as the audience.

MECHANICAL AND ELECTRICAL FEATURES OF ZOO

by Geo. E. Atkins, M.E.

THE new Zoological Garden and Playfield now in course of construction from plans by Lewis P. Hobart is located in a previously unimproved section off Sloat Boulevard, San Francisco. The uses of the various buildings designed for the housing and exhibiting of wild animal life and the requirements of the landscape features, which include lakes, brooks, fountains and water moats, demand a rather extensive electrical and mechanical distributing system.

The accompanying diagram indicates the main ground lines of electrical, gas, water and drainage distribution.

The electrical service to the grounds is primary metered at the transformer and main switchboard located in the concrete pump house at the north side of the property, and thence run underground at 480 volts three phase to all buildings. All motors utilize this voltage, and lights and other devices are served through dry type transformers at 120-240 volts. As the buildings and grounds are not to be open to the public at night, all spaces are wired for utility purposes only, except that inside animal dens, stalls and cages are flood lighted. Provision is also made to flood light the animal yards adjoining buildings for pachyderms, lions and bears. All side services to buildings are equipped with manhole disconnect switches. Empty conduits are provided for future ground and pathway patrol lights, and an intercommunicating service between the buildings.

The Pump House contains a 132,000 gallon concrete sewage collecting basin receiving the discharge of all sanitary, pool, moat and other drains in the grounds; and a 23,000 gallon water storage cistern to balance the supply to the artificial lakes and brooks. Two 10 H.P. automatic submerged sewage pumps deliver all drains to the street sewer above. The lakes and brooks system is kept moving by a 10 H.P. circulation pump. A 15 H.P. balance pump is also located at the Pump House, drawing its supply from the balance cistern.

The water supply for irrigation, hydrants and wash-down purposes is a 6" cast iron line circuiting the grounds and connecting to branch lines to lawn sprinkler boxes and buildings. This line is at present supplied from present wells, but it is planned to eventually draw a more adequate supply from a new pumping plant to be located at Lake Merced. The irrigation line is paralleled by a 2" drinking water line connected to street mains, and supplying all drinking fountains, basins and sinks.

A 4" gas main from street lines supplies fuel to the heating plant in the lion house and in the aviary, and also supplies the restaurant kitchen.

The public spaces inside the lion house, pachyderm house and flight cage are provided with winter air conditioner plenum systems delivering an ample temperature controlled air supply to keep these spaecs warm, dry and free from animal odors. The interior cages and stalls are also provided with exhaust ventilation. A steam boiler plant burning fuel gas is located in the lion house and supplies steam for house and water heating to this building and through underground mains to pachyderm house and to future buildings as they may be added to the north and west. The heat for the air supply to the public space in the flight cage is supplied by a gas-fired warm air furnace.

Photo by Moulin

SMALL MAMMAL DENS, HERBERT FLEISHHACKER ZOO, SAN FRANCISCO
Lewis P. Hobart, Architect

STIMULATE MARKET FOR SMALL HOUSE CONSTRUCTION

By W. D. M. Allan

WHY is it that in 1925 and 1926 there were built and sold 700,000 to 800,000 housing units and in 1937 a scant 200,000, in the face of the facts that better and more livable homes are now available; financing has been greatly improved; cost of construction is lower; population is larger; builders and materials are readily available, and there is a much-talked-of shortage of housing? In 1927 houses were a good buy for large numbers of people; at this writing they are not a good buy.

The following are, in my opinion, some of the less commonly mentioned but, nevertheless, important reasons why folks who could afford it do not build. These reasons are in addition to high real estate taxes, general business uncertainty, large unemployment and depletion of family reserves:

(1) Prospective buyers have been told repeatedly by the building industry that just around the corner they can get a factory-made house with all of the modern conveniences at about one-half the price they would pay for a house constructed by ordinary methods. Suppose that General Motors would announce several times during the year that in a short time a new model Chevrolet would be available that was far superior to the present model and at half the price. How many 1938 Chevrolets do you suppose would be sold? Not many, I am sure. Is it any wonder that a great many potential house buyers are still waiting for their $6,000 house for $3,000?

Our laboratory and field research will be driven full speed to cut costs and improve products, but our press agents will be kept out of the laboratory until its findings have been proved. Publicity which jumps the gun by five to ten years does no end of harm.

(2) A second important reason why folks aren't buying houses is that too many of their friends who did buy during the previous building boom are thoroughly soured on what they got. A house which in three or four years begins to sag and crack, requires high maintenance expense, and has low or no resale value, is a poor investment. House buyers are being educated to know the requirements of good construction. When they see the same jerry-building going on today that was common in the last boom, most of them go back to their apartments and spend their down payments on something in which they have confidence—but not a house. We have made our bed, and here we lie. Until it is corrected, house building will suffer—unless a powerful speculative market develops in which quality construction will mean nothing.

Somewhere along the line in the designing, building or financing of a house, there must be some agency with a sufficiently strong selfish interest in sound construction to prevent the

*From an address by the Director of Promotion, Portland Cement Association, Chicago, at a U. S. Chamber of Commerce Conference in Washington, D. C.

continuation of jerry-building and to restore the public confidence in home ownership.

The building material producer can cooperate, but he cannot stop misuse of his materials. He has little or no supervision over them after they leave his plant.

City building departments cannot do it, because they are too grossly under-staffed.

The contractor cannot do it, because he is forced to bid down to a price which too often precludes sound construction and materials. He gives as much as he can for the price he can get. But he cannot give a two-dollar value for a one-dollar price.

The better grade of realtor can be a factor, because he frequently deals with intelligent people who can be sold on good construction. There is in nearly every community one or more realtors who specialize in good construction even in the less expensive houses. But, by and large, the realtor cannot be expected to take on any additional sales cost. Since so many of his prospects are ignorant of construction requirements, a few gadgets and bright colors generally turn the sale.

EXPERT ADVICE NEEDED IN SMALL HOUSE BUILDING FIELD

THE architect—usually pictured at his desk as the student and dreamer drawing swank villas for the wealthy or charting skyscrapers for the nation's industry—must be drafted to serve as the most "practical" figure in the small home building field.

Such is the belief of Donald H. McNeal, Technical Director for the Federal Home Loan Bank Board and head of the Federal Home Building Service Plan, which seeks to make available the services of the architectural profession to the 83 per cent of American families whose incomes restrict them to homes costing $7,500 or less.

The proof, Mr. McNeal contends, lies in the millions wasted through lack of proper planning, poor materials and flimsy workmanship in the past, and in experiments and surveys which show that proper technical supervision not only would have resulted in sound investments but that economies of construction would have greatly outweighed the cost of that supervision.

As Deputy to the General Manager of the Home Owners' Loan Corporation, Mr. McNeal directed the reconditioning of 500,000 homes to make them worthy of long term mortgages. These operations revealed to the Bank Board the full extent of poor residential construction and resulted in the Board's establishment of the Service Plan. Experiments on supervised construction were conducted with leading lending institutions of the Federal Home Loan Bank System for several months, however, before formal inauguration of the program.

Mr. McNeal quotes reports of architects sent out to inspect small home projects as evidence of what would have been saddled on the owners had not technical service been provided:

"1. Insulation poorly installed . . . rock wool bats loosely placed, which in a period of years would pack and leave open space next to ceiling with no protection . . . Contractor instructed to go over entire job. Concrete floor pour, grout roughly placed and of poor mixture . . . contractor had planned finish coat of only ½"

to 1″ thick . . . floor would have cracked and finish peeled off. Instructed contractor to place 2″ coat of rich mixture. Instructed contractor to double all joists under partitions before any further disbursements would be made on loan. Two weeks after concrete walls had been placed, heavy rain occurred and walls settled down and away from basement wall . . . contractor had not anchored area walls to foundation. Contractor instructed to repair damage. Inside painting very poorly done . . . enamel work rough . . . will have to be done over.

"2. No waterproofing on foundation . . . joists over garage seem too long span . . . insulation should be fastened to studs with wood lath. Header over door from vestibule to living room should be trussed . . . sheathing over window openings should be placed before weather and rain damages rock wool.

"3. Work sloppily done, except cement work . . . insulation poorly applied . . . not enough insulation around water pipes . . . window frame open at sill and will cause future leaks. Outside paper poorly applied . . . will not shed water."

These reports of one home-financing agency are typical, Mr. McNeal declared. This particular savings and loan association, one of the largest in the Northwest, dismissed four contractors on various operations before its architect's recommendations were carried out. That borrowers appreciated the precautions taken in their behalf is attested, Mr. McNeal said, by a volume of thankful and laudatory letters in the association's files.

"This savings and loan association has done its borrowers an immeasurable service by checking shoddy construction," said Mr. McNeal. "But the Federal Home Building Service Plan goes even further; it starts with the home seeker at the beginning of his project, before any false steps are made. It provides cooperation between the lending agency and the architect which gives the home builder sound financial counsel, aid in selecting a design which meets family requirements and is suitable to site and neighborhood; selection of a qualified contractor; specification of materials and a check on those materials, and supervision of construction.

"Neither a good home design nor a competent contractor alone assures a good home. All these services are necessary to give property lasting value. Too many mushroom properties have all the gadgets which are 'sales points' to the average inexperienced home builder but which fail to make up for the hidden faults that lie beneath a covering of paint and paper.

"Protection of the home seeker comes first. But supervised construction is just as vital to the lending agency. In these days of long term mortgages, only properly built homes are safe security for home-financing institutions. These institutions gain in another way; their sound policies not only attract the most dependable building prospects but the highest type of savings investors."

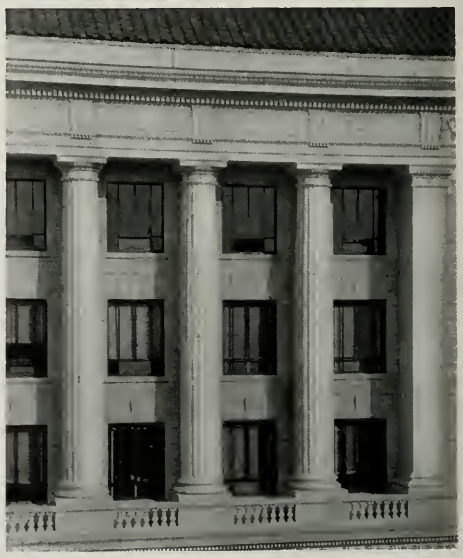
As evidence that lending institutions are accepting that viewpoint, Mr. McNeal pointed out that in many key communities, lenders now are allowing maximum loans and the most liberal terms only when architectural services are utilized.

"Architectural services heretofore seldom have been available to builders of small homes at a fee commensurate with their pocketbooks," he said. "The architect, in the average man's mind, has been a cross between an artist and a luxury, to mix metaphors a bit. The small home seeker procured a design in hit or miss fashion, got a contractor the same way, and out of his 'shopping around' came a house. In many cases, it was not even suitable to his needs. And the house and those of his neighbors, who got their homes in the same haphazard way, rapidly depreciated.

"A competent and independent technical adviser is a practical and elemental protector, just as necessary as a good contractor. When you get the services of the first, you are assured those of the second. Everyone stands to gain. Ethical materials dealers want to suppy the proper, specified materials; ethical contractors want to build homes to which they can point with pride. The jerry-builder takes umbrage at precautions which insure a sound investment."

FEDERAL POST OFFICE BUILDING, SACRAMENTO, CALIFORNIA
Starks and Flanders, Architects

WEST ENTRANCE DETAIL



DETAIL OF COLONNADE

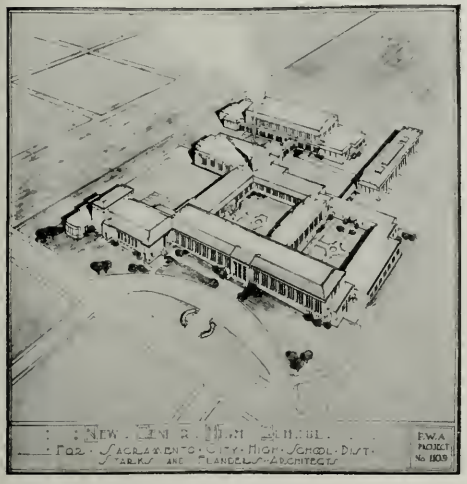
HOUSING FOR IDEAS

The suggestion of a great industrial plant is particularly striking in this view from athletic grounds on the west.

An Educational Building
For Today and Tomorrow

By Harris C. Allen, F.A.I.A.

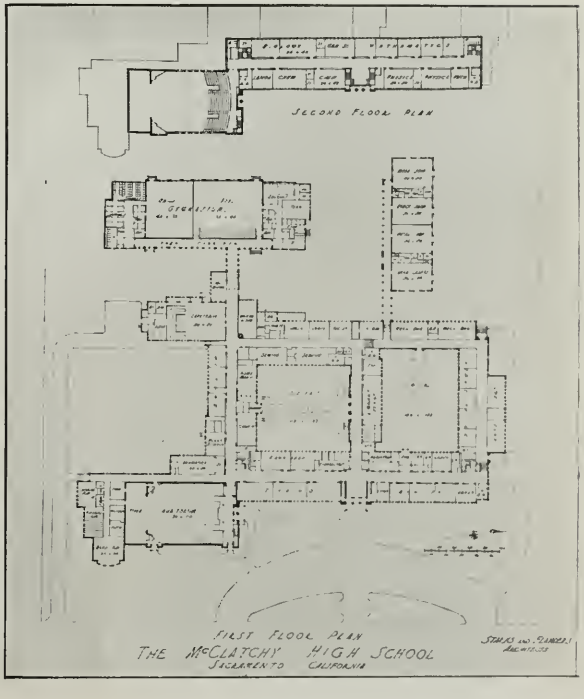
THERE is much talk of "Industrial Plants." Is it not even more appropriate to refer to a large, all-round school establishment as an Educational Plant? For there the seeds of mental and physical development are—or certainly should be—planted and watered and nourished until they become as healthy and vigorous young plants as their nature permits, and are ready to start their life jobs or to be transplanted to another nursery for special grafting.



AIRPLANE VIEW, THE McCLATCHY HIGH SCHOOL, SACRAMENTO, CALIFORNIA
Starks & Flanders, Architects

Some such thoughts come to mind as one inspects the quite complete and intensely interesting new McClatchy Senior High School in Sacramento, some views of which are being shown herewith. It is a large establishment, equipped for about 2,000 pupils, covering a space roughly 360,000 square feet in area. The requirements are necessarily complicated, for a high school in a great agricultural district requires more emphasis on practical training courses and less preparation for collegiate education than in a metropolitan school of similar grade. This may be a moot point in scholastic circles, but it appears to be demanded by the taxpayers who support the schools, or at least supply the raw material which is the reason for their existence.

This complicated system, obviously, must be adequately housed if it is to work efficiently. For the smooth-running, well-oiled mechanical



FLOOR plans show excellent circulation. Future units include a wing to extend west from Music Department, enclosing a third (south) court; one to extend west from north wing, for more class rooms; and another shop building south of the present open corridor to shops.

McCLATCHY SENIOR HIGH SCHOOL, SACRAMENTO

A CLASSIC SIMPLICITY CHARACTERIZES THE MAIN EASTERN FACADE, WELL SUITED TO THE CONCRETE CONSTRUCTION

THE AUDITORIUM IS DIRECTLY ACCESSIBLE TO THE PUBLIC, AND SUFFICIENTLY REMOVED FROM MAIN SCHOOL ACTIVITIES

Note Steel Flag-pole with Indiana Limestone Base at Right, Erected by Mrs. C. K. McClatchy in Memory of Her Husband

operation of the McClatchy High School, its faculty must be grateful to the architects who planned so understandingly and specified and constructed so satisfyingly—Messrs. Leonard Starks and Edward Flanders, also of Sacramento. It is interesting to know of certain facts relating to the time element. In order to utilize WPA facilities, it was discovered that actual work had to be started within a very short time—almost a matter of days rather than weeks. Working plans had not been started; even the site had not been determined.

Luck, it has been said, is when opportunity meets preparedness. In this case, luckily, the preliminary plans had been so carefully studied that although the site finally chosen was one not previously considered (and with a decided grade in two directions), the general plans were promptly adjusted to fit, and working plans turned out for one of the connected buildings in time to meet WPA conditions.

Plans for the balance of the work were promptly completed. It should be noted that provision was made, wisely, for future extensions to meet the needs of increasing attendance—without disturbing either the scheme of operations or existing structural conditions.

"Architecture" is not, contrary to the belief of many, a matter solely concerned with external appearance; now, less than ever. However, good design (inside as well as outside, for that matter) is considered more important now than in some previous periods of our educational history. It is realized that adolescent development is influenced by its environment; and adult citizens find their own increasing uses for school buildings, and are correspondingly more interested in them. Ask your Board of Education if citizens ever express pride—or dissatisfaction—in the buildings your community has provided for public educational uses.

The main facade of the McClatchy High School should hold its own for a long time to come. Eschewing classical detail in a truly contemporaneous manner, it nevertheless produces a classical effect. Interior functions, lines of traffic, are clearly indicated; and this has been effected without friction, without disturbing the unity of the composition as a whole. I imagine that pupils, parents and faculty can unite with little or no dissent in a feeling of satisfaction, not to say pride, over the dignified and handsome habiliment of their new abode.

FACING THE ATHLETIC FIELDS ARE THE GYMNASIUM AND SHOP BUILDINGS

Nor would this feeling be dissipated on entering the building. Instead of the cold, prison-like corridors so often found, here the halls have a decidedly warm, cheerful effect; exposed concrete ceiling beams are stenciled in soft color patterns; walls are wainscoted to door height. Wainscoting consists of long rows of locker doors, punctuated by room doors or wall covering of the same color. Walls above

PANELS PICTURING SCENES TYPICAL OF STATE HISTORY ADORN THE TILED FOUNTAIN, DONATED BY MR. McCLATCHY'S DAUGHTERS. A BALCONY OPENS FROM THE CENTRAL CORRIDOR.

THE DOMESTIC SCIENCE DINING ROOM BAY OVERLOOKS THE FOUNTAIN COURT

FROM THE LARGE, MARBLE-WALLED ENTRANCE FOYER STRETCH WIDE CORRIDORS, LIKE ARTERIES, AROUND THE BODY SCHOLASTIC.

A novel accent is the building plan in inlaid linoleum at the center of the floor. Bronze plaques present a bas-relief of C. K. McClatchy, a testimonial to teaching.

are of acoustic plaster, as are walls in library and auditorium, and ceilings in class and study rooms. The lack of noisy echoes, throughout the building, is impressive.

Not only corridors, but all rooms of every character except shops are agreeably treated with quiet color schemes, all differing. The two large courts will add their notes of pleasing environment, when planting and furnishing are attained. Incidentally, the importance of having these courts expertly landscaped cannot be over-emphasized; they can be made into beautiful and significant influences for developing character, or they can deteriorate into uninteresting necessities for light and passage—depending entirely on how they are planned and planted. Such plans would probably include benches, sun-dials, fountains—all likely subjects for future gifts or memorials. One court, of course, already possesses such a fountain, built

THE AUDITORIUM HOLDS 1100 SEATS, ALL GOOD FOR SEEING AND HEARING, WITH SPACE FOR AN 85-PIECE ORCHESTRA AND A FULL-RIGGED STAGE.

McCLATCHY SENIOR HIGH SCHOOL, SACRAMENTO

A SPACIOUS, QUIET, WELL-VENTILATED CAFETERIA HAS COMPLETE UP-TO-DATE EQUIPMENT. THE HARDWOOD FLOOR ENABLES IT TO BE USED FOR CLASS DANCES.

THE WOOD-WORKING SHOP, HERE PARTLY SHOWN, IS TYPICAL OF THE LIGHT AND AIRY SPACES PROVIDED FOR VOCATIONAL TRAINING — IN WHICH LOCAL TRADE UNIONS ARE TAKING A SYMPATHETIC INTEREST.

in memory of C. K. McClatchy, with pioneer scenes in gay colored tile around its basin. Good enough; but how it cries for leafy comrades!

Recalling some of the charming courts in Southern California schools and clubs, one can visualize what a real opportunity is here offered.

Certain special points of planning which work out well can be mentioned. For those phases of school life in which noise is either necessary, or is undesirable, isolation is required; and here these conditions are well met. Music rooms—for voices and instruments—are tucked away back of the auditorium, in the far front corner. And the auditorium itself is very accessible to the public for meetings or entertainments, an increasingly necessary matter. It is noteworthy that an extra stairway, besides lavatories on two floors, are available to the auditorium, with the balance of the school building shut off by folding iron gates in two corridors. There is provided a full-rigged stage with gridiron; by omitting a gallery, it is easier to control the audience, and all seats are good ones.

Near the auditorium is a minor hall for rehearsals, faculty meetings, and gatherings of that potent organization, the P.T.A., which preceded the Federal Alphabetical bodies—and may succeed them. Here a small kitchen adjoins, to sustain speakers and hearers with tea and what-have-you. (Although the P.T.A. is more widely spread than the KKK, there may still be those who do not know that it stands for Parent-Teachers Association.)

On the opposite corner in the rear is the shop building, where pupils become familiar with machinery and the craftsman trades and can rivet and weld, hammer and saw, to their hearts' content without interfering with general class work or study. The shops have abundance of light and air, are well equipped.

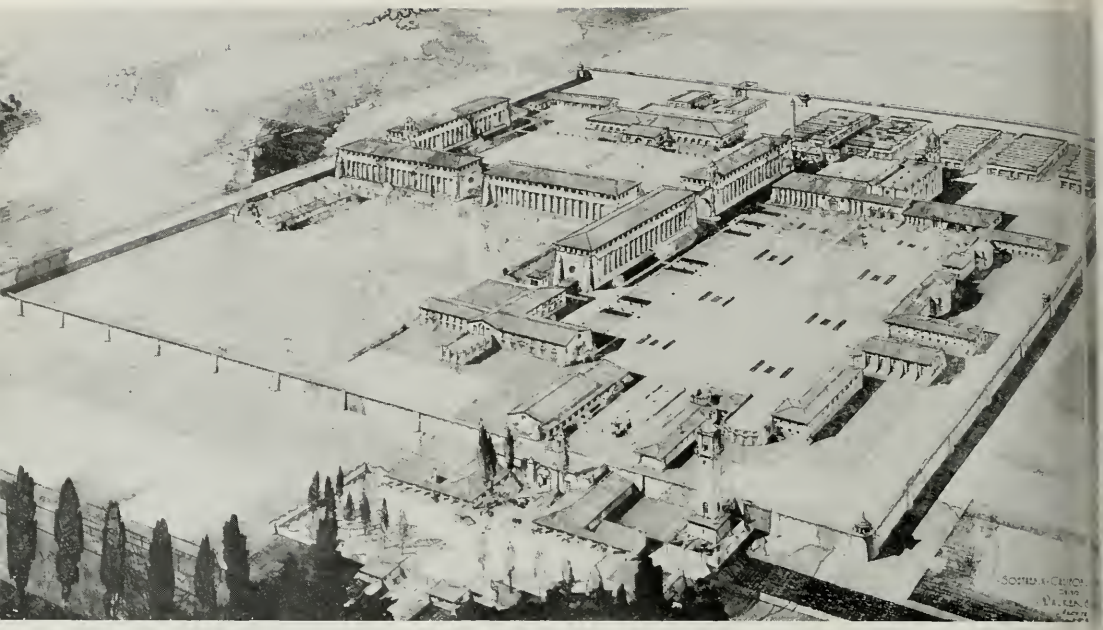
The health clinic is also quietly located, and convenient to both school rooms and gymnasium—which latter is not only well planned for physical training and control of pupils, but opens to a huge field for all kinds of athletic activities. The school grounds cover about thirty acres, and at the rear adjoin grounds of a junior college.

Another corner is occupied by cafeteria and kitchen, a good arrangement for obvious practical reasons. In the fourth corner one of the main stairways is placed, and on account of the grade a basement entrance is possible, utilized for delivery of all school materials.

All science rooms are in the second story, which runs over the front portion only; presumably the "odors" are thus kept from contaminating the academic atmosphere. A fine big library appropriately occupies the center wing, which is higher than the other one-story wings. Administrative offices are also centered conveniently, and commanding the two inner courts.

One more interesting item is worth special comment—the location of plant study, between auditorium and cafeteria, and directly accessible to a large side court so that practical experiment and training are possible.

There are a number of other features that might be mentioned—such as the several display cases recessed in corridors, for exhibit of department work—but enough has been said, I feel sure, to convince the reader that the new McClatchy Senior High School is a valuable addition to Sacramento's school properties, is a veritable educational Plant for nurturing mental and physical growth. And I wish to emphasize the vital importance of good planning for successful operation of these Plant activities, academic, athletic and altruistic. Also, the fact that excellent construction was achieved economically, at a low comparative rate per pupil, is noteworthy and commendable.



AIRPLANE PERSPECTIVE OF PROPOSED CALIFORNIA STATE PRISON
SAN BERNARDINO COUNTY . . . ESTIMATED COST $9,500,000
WALKER & EISEN, ARCHITECTS

Courtesy Southwest Builder and Contractor

MODEL OF STUDIOS FOR NATIONAL BROADCASTING COMPANY,
HOLLYWOOD, CALIFORNIA
DESIGNED BY O. B. HANSON

BUILDING OWNERS AND MANAGERS TO CONTINUE MODERNIZATION

RECENTLY "Buildings and Building Management" conducted a nationwide survey of building owners and managers to get an expression from them on modernization plans for 1938. The questionnaire referred particularly to proposed modernization work on office, commercial and apartment house buildings. The Pacific Coast was included in the survey. It was found that nine out of every ten who replied to the inquiry will modernize their holdings this year.

Included in the survey are reports from 154 cities in 43 states and the District of Columbia. All of these reports were analyzed by the Arthur C. Weick Company, of Chicago, market analysts who prepared a complete report on their findings. The following information is based on this report by the Weick organization:

The owners and managers cooperating in this annual forecast control a total of 32,027 office, commercial and residential buildings and 88.4 per cent of them plan partial or complete modernization of their properties during 1938.

Reports from the owners and managers of office and commercial buildings indicate that a total of $53,808,500 will be spent in the modernization of such buildings in 1938. Reports from the apartment building owners and managers who intend to modernize their properties during 1938 indicate a total expenditure of $9,344,500 on these buildings. On an average, each owner or manager who plans modernization in the office and commercial building field will do work on 3.1 buildings. In the apartment building field, the average owner or manager who plans modernization next year will do work on 15.6 buildings. Plans for new construction are not included in the detailed analysis of proposed modernization work, but it interesting to note that the survey indicates a total of 180 building owners and managers planning new investment buildings during 1938.

The survey provides a detailed breakdown of these modernization plans. The major classifications of work to be done in office and apartment buildings show the following percentages: Decorating, 15.7%; Plumbing, 15.3%; Electrical, 15.2%; Exteriors and Roofs, 15.2%; Heating and Air Conditioning, 14.8%; Elevators, 9.6%; Floors, 8.6% and Miscellaneous, 6.1%.

In the apartment building field, the survey shows these percentages for the major classifications of modernization work: Plumbing, 21.8%; Decorating, 18%; Kitchen Equipment, 10.5%; Floors, 9.6%; Electrical, 9.3%; Building Exteriors, 7.3%; Elevators, 3.2%; and Miscellaneous, 5.7%.

Carrying the analysis a step farther, the details on which these major classifications are based, afford an interesting insight into the thinking of building owners and managers and into the trends which will characterize modernization work in office, commercial and apartment buildings during 1938.

It is, for instance, highly significant that one building out of each five office and commercial buildings is definitely contemplating partial or complete air conditioning next year. Three out of five plan to redecorate to increase rentability. One out of three will install Venetian blinds and one out of four new window shades to enhance the attractiveness of office space. More than half of the reporting buildings will install new lighting fixtures in partial or complete replacement installations to meet present-day lighting requirements. One-third will rewire in whole or in part to comply with increasing demands. One out of three buildings will install new floor coverings and one out of five will recondition floors as a modernization project. One-fifth of the buildings plan to install new mats or to replace existing mats.

Nearly half of the office and commercial buildings will do exterior work next year, and one-third of all these buildings plan to repair or replace their present roofs. One out of each three will install new store fronts or modernize existing store fronts. A fourth of them will replace or renovate their entrance doors. More than a quarter of them will replace or recondition their present elevator equipment, with almost as many replacing or remodeling their present elevator cabs. New cables are scheduled for nearly 30% of these buildings, with others recabling as future necessity may dictate. New hardware is slated for 1938 in 23% of these buildings, while 27% are already planning their 1938 partition changes.

The apartment building plans are no less varied and informative. Air conditioning installations, while less than half as frequent as in the office and commercial building field, are planned in almost 10% of the apartment buildings. The air conditioning trend is becoming definitely noticeable in residential buildings, even though complete installations are not yet numerous. Heating systems in apartment buildings seem to be due for extensive overhauling, with 30% of the buildings scheduling new traps and valves, 25% new radiators, and 19% new temperature control installation. Boilers show 34%, stokers 25% and oil burners 20%.

Bathrooms likewise are to be rehabilitated, with faucets receiving attention in 47% of the apartment buildings, toilet seats in 51%, toilet bowls in 34%, lavatories in 24%, pipe in 27%, flush valves in 24%, bath tubs in 27%, and shower equipment in 39%. Kitchen sinks rate the 1938 schedule in 36% of these buildings, stoves in 61%, refrigerators in 58% and new cabinets in 32%.

Decorating heads all apartment building modernization plans with 79%, while new wall coverings are contemplated in 52% of the buildings, new window shades in 64% and Venetian blinds in 30%. New furniture is on the 1938 docket in 32% of the buildings.

Lighting fixtures are slated for replacement in whole or in part in 55% of the apartment buildings, with 36% of them rewiring to meet the new demands. New floor coverings are anticipated in 57% of the buildings, with 48% of them reconditioning uncovered floors and 33% replacing carpets. Half of the apartment buildings now plan exterior improvements and 55% expect to work on their roofs during 1938.

And so it goes through the whole long list of materials and equipment required to keep office, commercial and apartment buildings in step with competition and in line with the times.

A detailed analysis of these items was presented in chart form in the January 16th Reference and Directory Number, where they provided a timely and informative summary of the improvements that building owners and managers regard as most important in their modernization plans for 1938.

LAMMOT Du PONT EXPLAINS UNEMPLOYMENT DROP

THE following is part of a statement by Lammot du Pont, President, E. I. du Pont de Nemours & Co., Inc., before the Special Senate Committee to Investigate Unemployment:

"In responding to the invitation to appear before this Committee, I want to make it plain that I have no theories to develop or panaceas to lay before you. The present situation is undoubtedly being explored before you by experts in economics, of which I am not one. The only contribution I can hope to make to your important study is from my own experience as a manufacturer, so I will present to you certain figures from the du Pont Company records with such light as they may throw on the national situation.

"Your first question concerns the prospective unemployment and relief situation in the United States in the first six months of 1938. I am not in position to make any estimate of the general situation. In the du Pont Companies, however, the facts are as follows:

"In 1929 the number employed by us was 42,000. This fell to a low point of 28,000 in 1932. Subsequently, our employment showed an almost continuous upward trend, reaching 55,500 at the end of December, 1936, and then rising to a peak of 59,800 in September, 1937. This declined by the end of the year to 51,600, which constituted a loss over three months amounting to 14%, and over the twelve months to 7%. At the peak of our employment last summer we had on our salary and payrolls 42% more people than in 1929, and at the year end we were employing 23% more people than in 1929. Our annual payroll at the year end was 40% higher, average monthly wages were 13% higher, average hourly wage rates were 26% higher, although the number of hours worked were 20% less than in 1929. Our total annual payroll in 1937 was 25% greater than for the year 1936.

Thirty-two Hour Working Week

"Ever since our sales began to decline last spring, we have gone to the limit compatible with sound business practice to maintain employment and wages at the highest possible level. Throughout 1937 previously planned programs of expansion were continued and business-getting departments were maintained at full strength. There was no curtailment in advertising and sales promotion, nor in research work. Deficiencies in inventories were made up, but goods could not be manufactured for which customers were lacking. Readjustments in production schedules were made reluctantly as a matter of necessity and in accordance with the situation that existed in each of our numerous plants throughout the country, which varied greatly from plant to plant on account of the diversity of our business. Working hours were then reduced in plants where curtailment was necessary so as to spread work and limit lay-offs to the lowest minimum possible. It does not seem desirable to reduce hours below 32 a week as that would result in a drastic lowering of earnings that would do more harm than good. Men have been laid off only as a last resort, and junior men first.

"The first intimation of a changing business situation came in April. The decline in sales of our products that followed became precipitate in the late autumn. Our November sales were 17% less in dollars than in November, 1936, and in December 28% less than in December of the preceding year. Our forecast of sales for the first six months of 1938 is 23% less than in the first six months of 1937. I hope that this forecast proves erroneous, but on the basis of careful estimates I cannot be too hopeful of increased employment in our company during the first half of this year, for it is

evident that we are in a pronounced recession."

Speaking of investments and accompanying heavy expenditures, Mr. du Pont said:

"Over the past eight years our total investment in new construction was $194,000,000. This shows our faith in the future of American enterprise and is cited as an indication of one of the contributions in my intimate knowledge made by private industry to employment and progress. New construction outlays projected for 1938, according to the compilation that has just been made, approximate $35,000,000. We are still looking ahead and hoping for better business.

Value of Industrial Research

"Much of the opportunity for making these investments has come about through the medium of scientific research, which we in the du Pont Company believe in.

"Successful industrial research undoubtedly creates new jobs. More than that, it creates new wealth in the form of new materials that are, necessarily, either better or cheaper than those they supplement or displace, and usually are both. The result is a wider distribution of goods and a higher standard of living. Rarely is research successful except through patient, sustained work over a period of years, during which substantial sums must be expended long in advance of any hope of return.

"Research demands long-term planning. Current outlays of money for its need are aimed, in the main, at five, ten, or twenty years hence. Du Pont employment in 1937 was what it was, not because of that year's research, but because of money spent on research in 1932, 1930, and earlier. In line with long-established policy, this form of insurance on the future has been held intact by du Pont management regardless of the ups and downs of sales charts. How such a policy affects employment can best be clarified by citing actual examples.

Some Outstanding Developments

"Perhaps the most outstanding of all du Pont research developments, both from the scientific and economic viewpoints, is the rubber-like material to which has been given the name neoprene. Unlike rubber in chemical composition, neoprene is an entirely new engineering material that fits into no existing classification. It looks like rubber, acts like rubber, serves where rubber serves, and for innumerable uses it will outlast rubber by many times. The basic raw materials from which it is made are coal, limestone and salt, which we possess in abundance.

"Research that led our chemists to neoprene began also in 1926. Almost six years of intensive work preceded the initial manufacture of their discovery on a small scale at Deepwater Point, N. J. And until the end of the year just closed, neoprene was produced at costs considerably in excess of its selling price, which was first $1.05 per pound, then $1.00, and then 75 cents as volume was progressively increased. Recently our chemists and engineers have been talking hopefully of neoprene's first profits—I said hopefully. Also they are talking —hopefully—of making a substantial addition to their present plant facilities. More than 200 manufacturers, including practically all of the principal producers of rubber goods, used neoprene in 1937, mainly for purposes that rubber itself could not serve satisfactorily, if at all.

"Research may serve employment as importantly by improving an existing product as by discovering a new one. Striking example of this fact is found in "Cellophane" cellulose film. When introduced in America by du Pont, in 1924, through the purchase of the French patent rights, "Cellophane" was a product with a limited field and many faults. However, when research had found ways to render "Cellophane" moisture-proof, to strengthen it, and otherwise to adapt it to the needs of merchandizing, the new transparent wrapping material became a factor of first rank in all packaging. It inspired betterment of all wrapping materials, regardless of what made, and, significantly, more than paid its way by reducing losses suffered in many types of goods through spoilage and handling. The price history of "Cellophane" is one of 18 successive reductions from $2.65 a pound to an average of about 41 cents a pound in 1936. This was increased by one-half cent last year. Since moisture-proofing was added in 1927, production has increased almost fifty fold."

DEVELOPMENTS IN AIR CONDITIONING RESEARCH

HOME owners, storekeepers of all kinds, movie theater owners and the architectural profession, may expect four major benefits and many important improvements, as the result of scientific research into air conditioning, heating and ventilating during 1937, according to the annual report of the Committee on Research of the American Society of Heating and Ventilating Engineers. The four major benefits are:

(1) Improved standards of summer comfort in air conditioned buildings as the result of tests on living subjects to determine correct summer cooling requirements.

(2) Lower operating costs for air conditioning systems in certain parts of the country, growing out of comfort tests showing that large sections of the population will be comfortable at comparatively higher indoor temperatures than were considered necessary in the past.

(3) Lower costs for residence cooling and economies in the installation of home air conditioning systems resulting from the ability to use smaller air ducts carrying high velocity air.

(4) Further extension of air conditioning service to hospitals and for the treatment of disease following closer cooperation and a better understanding between medical men and air conditioning engineers.

The report, prepared by Lt. Colonel W. A. Danielson, Chairman, reviewed the work of twenty-three technical sub-committees engaged in investigating major scientific aspects of the industry and covered the findings of nine college laboratories working under cooperative agreements with the Society's Research Committee.

How Cool Is Comfort?

Concentrating on problems of air conditioning science, about which new knowledge is constantly needed to keep the art technically in step with the immense public demand, the Committee announced the completion of the first phase of an investigation to determine correct summer cooling requirements which is expected to lead to more uniform operating standards for summer air conditioning and obviate complaints of over-cooling experienced by persons in theaters, stores, public buildings, etc. Special attention was paid to the "shock" effect of entering or leaving air conditioned buildings.

Several hundred people of different ages and both sexes cooperated in laboratory and field tests, carried out in four climatic zones throughout the country to determine at what "effective temperatures" greatest comfort is felt under artificial cooling conditions. ("Effective temperature" is a composite index of temperature, relative humidity and air motion.) Results tabulated at the end of the year disclosed that persons accustomed to the warmer climates of the South and Southwest, are comfortable in summer at relatively higher temperatures than those living in Northern and Eastern Seaboard areas.

The committee attributed this to the fact that people in territories where the winters are cold, become acclimated to lower temperatures and demand lower summer temperatures in air conditioned places while those accustomed to mild winters are more readily satisfied with higher temperatures.

As between groups tested in Texas and Minnesota it was found that the former felt

most comfortable at "effective temperatures" from 72 to 74 degrees, and the latter at "effective temperatures" from 70 to 72 degrees. The practical application of these findings to the design and development of air conditioning systems is expected to result in the ability to reduce the size and operating costs of such systems in those parts of the country where the longer service is required.

Treating Disease With Conditioned Air

F. C. Houghten, Director of the Society's laboratory in Pittsburgh, reported the beginning of a new research into the air conditioning requirements of hospitals, undertaken under the auspices of the medical school of the University of Pittsburgh and the Magee Hospital, in that city. "The treatment of venereal diseases by fever therapy in air conditioned fever boxes, in which patients are surrounded with high temperatures, high humidity air, has shown markedly satisfactory results and will be an important part of the medical research conducted by the University of Pittsburgh. Other investigations dealing with the medical requirements of air conditioning, were instituted at the medical school of the University of Illinois, in Chicago," Mr. Houghten said.

Advance In Home Conditioning

In the field of home air conditioning, fourth major phase of 1937 research, and considered by many to represent the greatest potential ahead of the industry, research started during the past year has brought measurably nearer the time when the average householder can air-condition his home in summer at a fraction of the cost considered possible a few years ago.

Investigation of this problem was centered at the University of Illinois, under the joint auspices of the American Society of Heating and Ventilating Engineers, and the National Warm Air Heating and Air Conditioning Association. Results of tests conducted in a "research residence" there, show that when awnings are properly placed and attic fan ventilation is used to remove heated air and draw a cool night air from out of doors, less than two and one-half tons of mechanical refrigeration are required to produce conditions of genuine comfort in the hottest weather.

Savings With Small Ducts

The possibility of using smaller diameter ducts carrying conditioned air at higher velocities with a consequent saving in fabrication and installation costs, is seen in research dealing with frictional resistance of air in small ducts. Colonel Danielson cited a report from Mr. Houghten, the Society's research director, that duct size can in some cases be reduced 30 per cent over present practice without serious friction losses. The new data being developed from these tests are expected to lower the cost of building air conditioning systems into the so-called mechanized type of house as well as to make for more compact installations in houses of conventional construction.

Radiant Heating

Radiant heating systems combined with the introduction of cleaned, humidified air came in for study during the year at the Pierce Laboratory of Hygiene at Yale, and by Dr. C. A. Mills, of the University of Cincinnati, Colonel Danielson reported. "Among those who have studied this problem closely, there is a growing belief that some combination of radiant heat energy and air conditioning may offer a new and perhaps the most healthful way of heating our homes," he said.

Problems which air conditioning has presented to builders and architects led to the organization during the year, of a special program of research aimed at collection of new data relating to the effect of air conditioning on insulating materials.

The growing number of homes being filled with humidified air during the winter heating season has called for a complete revision of existing knowledge of the behavior of insulating materials under these new conditions, Colonel Danielson indicated.

Insulation Problems

"Paradoxical as it may seem," he said, "insulating materials while highly effective in keeping out the cold, are themselves subject to attack from within by the action of the moist

[Please turn to column 2, page 47]

NEW TYPE OF REFLECTING CURB

by F. J. Grumm

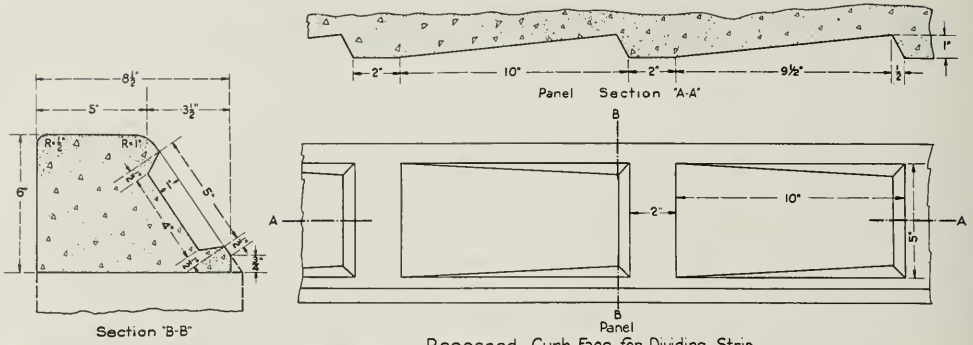
TO REDUCE the hazards of night driving, the Division of Highways, California State Department of Public Works, has designed a new type of curb which will reflect the light from the headlights of a car, thus increasing its visibility and more clearly mark the marginal limits of the roadway.

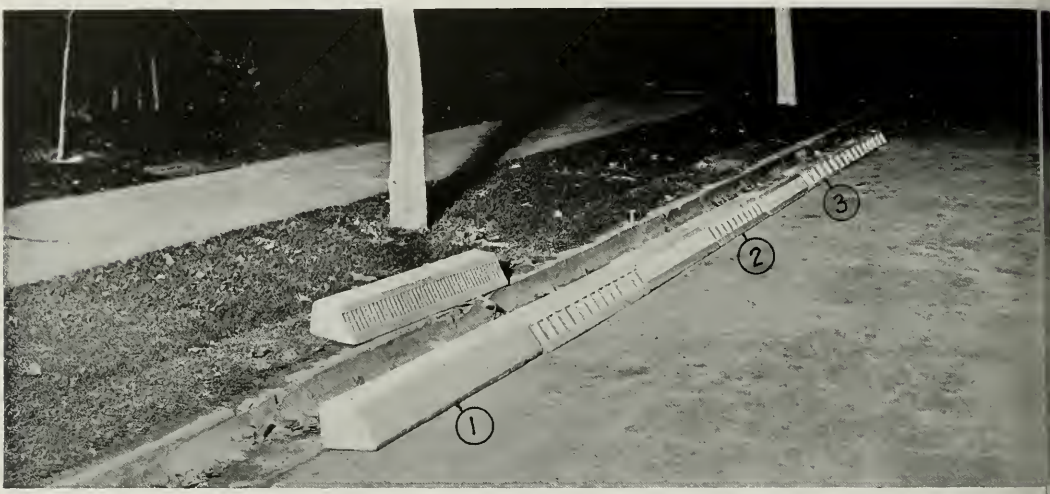
In the development of highways with multiple lanes separated by a dividing strip, efficiency and safety of the facility that is designed principally as a safeguard against head-on collisions, also depends upon the provisions made for facilitating and safeguarding movements on the roadways each side of the dividing strip.

In each roadway the traffic lane widths have been increased to a minimum of 11 and 12 feet, traffic stripes are placed, and, where conditions are suitable, adjacent traffic lanes are constructed of types that show contrast in surface appearance. The curbs that border the separated roadways constitute the more important feature in guiding traffic.

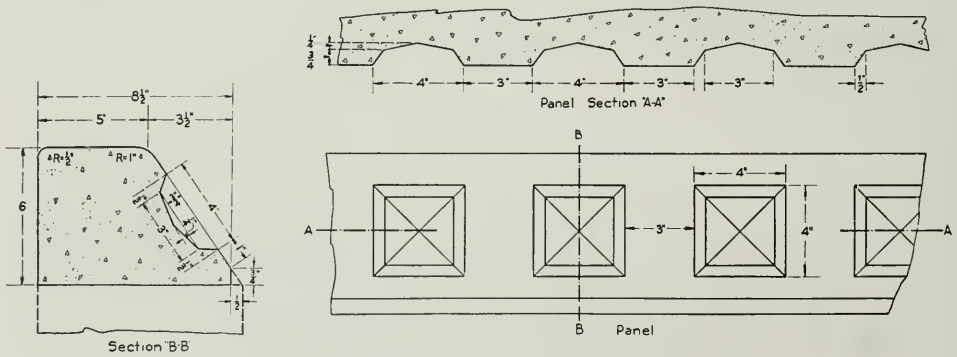
Under normal daylight driving conditions when visibility of the road and of the above features obtains, satisfactory results may be expected. In the case of night driving, however, the effectiveness of traffic stripes and the conventional type of curbs is reduced, especially in cases where the separation strip is limited in width, glare of opposing headlights has a blind-

Artist's conception of new type of reflecting curb for intersectional islands and division strips. Upper inset shows wedge shaped recess for separation strip curbs. Lower inset shows block type recess under direct headlight rays.





Three types of curb. 1—Section of standard conventional curb. 2—Block type recess proposed for curb returns and intersection islands. 3—Wed shaped recess for separation strip curbs.



Courtesy California Highways and Public Works

ing effect, or visibility is decreased in fogs or storms. Then the specularity of the separation curbs which define the limits of the traffic lane becomes of increasing importance, particularly inasmuch as the lane adjacent to the curb is the high speed or passing lane.

Studies have been made of curb design in an endeavor to improve its effectiveness and visibility at night or during adverse weather conditions. Curb sections were constructed with various dimensions, slope batters, face designs and paint combinations.

The best results for visibility of the curb under all driving conditions were obtained by making small recesses in the face of the conventional curb. Curbs were constructed with different forms, widths, spacings and angles of recesses.

By observation of direct comparison it was clearly demonstrated that reflecting facets, designed to proper depth and angle, produced an effect markedly superior to other curbs when viewed under rays of automobile headlights. Additional benefit was derived by painting the reflecting plane with white paint and this was improved by impregnating the paint with glass beads.

Two types of recess forms which appeared to be the most effective have been adopted for construction:

First, a simple type of wedge shaped indentation, most suitable for central dividing strips where traffic movement approximately parallels the curbs.

Second, a block type with all faces of the recess sloped to reflect light, most effective for intersection islands and curb returns, where headlights are directed against them at more abrupt angles.

In the plan and specification for the curbs regard has been given to practical and economical construction and to their durability and maintenance. Although some change in design may increase the effective visibility of the recessed curb face, the types indicated are being constructed.

This reflecting type curb is a development of a design observed in the State of New Jersey.

AIR CONDITIONING RESEARCH

[Concluded from page 44]

air which finds its way into the spaces between the outer and inner walls which condenses there and often ruins or seriously impairs the value of the insulating medium.

"The millions of dollars to be expended in home construction under the Government's business recovery policy, requires expert knowledge of the value of many new types of insulating materials and the development of a technique in their application to avoid serious monetary loss and grave damage to builders' reputations by failure of such materials to function correctly. One of the most important phases of the research of the A. S. H. V. E. has been devoted to this question."

Colonel Danielson also reported a research program aimed at determining the insulation value of such new construction materials as glass blocks and for the revision of existing data dealing with heat transmission through single and multiple glazing.

REINFORCED CONCRETE HOUSES

"The Reinforced Concrete House," a new 24-page, profusely illustrated book by Portland Cement Association, attractively presents the latest developments of this type of concrete house construction.

Homes in all price ranges and varieties of climate, are illustrated, most of them accompanied by floor plans. Graphic illustrations show the various types of concrete floors available and how they are built. Photographs of actual wall surfaces show the wide range of finishes possible in exposed concrete, plain or painted.

Included in the book is a recent photograph of a reinforced concrete house built in 1883 attesting to concrete's durability, rigidity and permanent beauty.

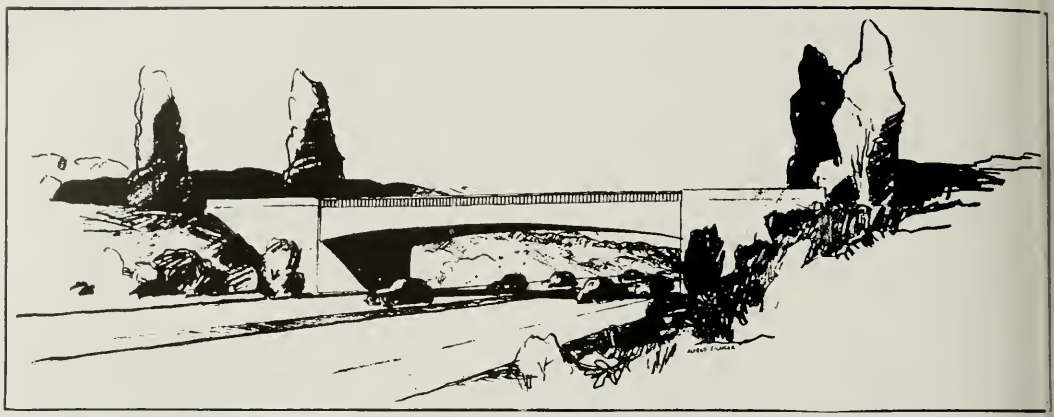
Copy of this booklet may be had on request to Portland Cement Association, 33 West Grand Avenue, Chicago, Illinois.

NEW REGISTRAR OF CONTRACTORS

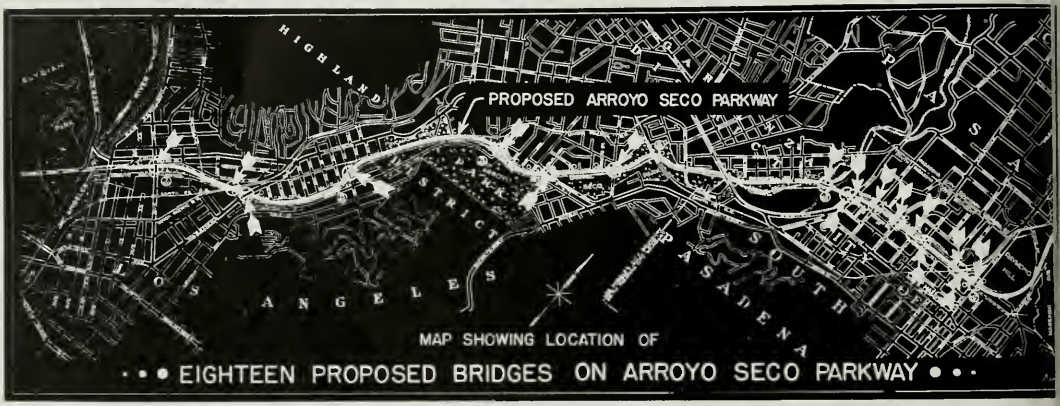
Arthur Alber, Los Angeles attorney and civic leader, has been appointed State Registrar of Contractors by the California State License Board.

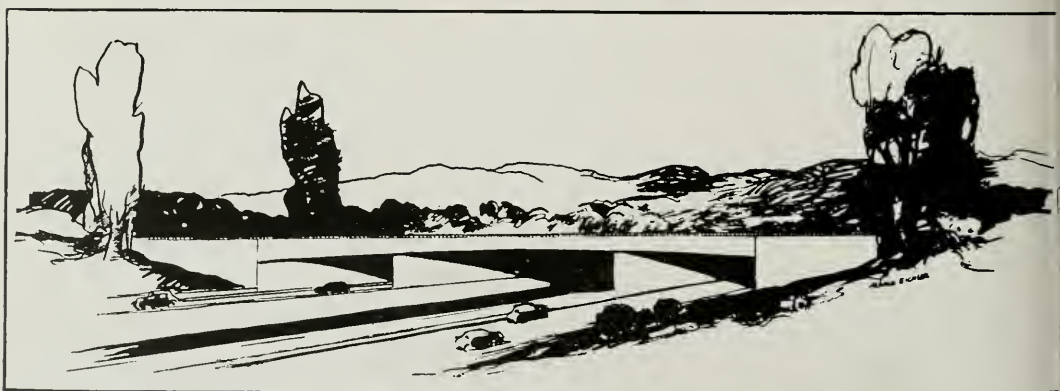
Mr. Alber succeeds Earl S. Anderson of Los Angeles, resigned, now Manager of the Construction Industries Department of the Los Angeles Chamber of Commerce.

STATE TO BUILD EIGHTEEN CONCRETE BRIDGES IN LOS ANGELE



Sketch of proposed Arroyo Drive concrete rigid span over Arroyo Seco Parkway, Los Angel





Courtesy California Highways and Public Works

Proposed continuous concrete span structure (289 feet) carrying Hough Street over Arroyo Seco Parkway, Los Angeles

BERKELEY DISCUSSES HOUSING

Housing, in many of its phases, was discussed at a meeting called by the Berkeley Council of Social Agencies on January 25. Held in the College Women's Club, the dinner meeting was followed by a forum and a colored motion picture illustrating much of the material presented by the several speakers.

The meeting was in charge of Harry Cobden, Housing Inspector of Berkeley, and the speakers were Burton D. Cairns of the U. S. Department of Agriculture, who is the Chief of the Division of Architecture and Engineering in the Department; Vernon De Mars, assistant to Mr. Cairns; A. Gallion, Secretary to the San Francisco Chamber of Commerce Housing Committee; Gardiner Johnson, State Assemblyman, and A. L. Brinckman, Chief Building Inspector of Berkeley.

Mr. Cairns gave an interesting talk on the organization and methods of the Division of Architecture and Engineering of the Department of Agriculture and explained in detail the problems met in trying to provide living accommodations for transient or migratory laborers; also the "resettlement" work in Texas, Arizona and California.

Mr. De Mars showed models of resettlement projects and gave a running comment on the colored movie of these projects. The most interesting feature of this talk was a detailed explanation of the methods used in erecting and furnishing adobe houses of one and two stories in locations where temperatures sometimes reach 120 degrees. The two story-eight family multiple dwellings seemed to be the answer to low cost and comfortable housing in these instances, as the "unit" cost per family was about $1,200; and each unit had a large cross-ventilated sleeping porch on the entire second floor, thus escaping the prevailing ground fogs arising from the open irrigating ditches in the area around the projects.

Mr. Gallion explained the purpose and workings of the Wagner-Steagall Act and also the Federal Housing Act. He also answered several questions concerning the local situation, and gave an interesting insight into the California position on the proposed enabling acts.

Mr. Johnson spoke briefly on the status of these enabling acts, and the possibility of again passing them through the State Legislature, as they were "pocket vetoed" by the Governor last year.

Mr. Brinckman spoke on housing history in Berkeley, and explained some of the provisions of the new amendments to the State Housing Act.

After the speakers had completed their comments a question box was opened and all the written questions that had been asked were answered by the appropriate speakers.

Some 120 persons attended the dinner and about 250 attended the exhibit and meeting later. Among the distinguished guests, besides the Federal and State representatives, were Assemblyman Johnson, Councilman Walter Mork, City Manager Hollis R. Thompson, Postmaster Frank M. Whiting, and Emery Stone, Managing Director of the Berkeley Chamber of Commerce.

Mrs. T. S. Lossing, Berkeley City Policewoman, is President of the Berkeley Council of Social Agencies and presided during the dinner and meeting.

PLENTY OF COLOR FOR MILADY

CORNER OF TILED KITCHEN IN RESIDENCE OF C. W. CRAFT, PIEDMONT, CALIFORNIA
Wm. E. Schirmer, Architect

IN keeping with the Eighteenth Century Style of the house, the use of color in the kitchen of the new home of C. W. Kraft in Piedmont achieves both variation and warmth of tone.

Fixtures and drainboard are white. The walls are rust-color. The floor is of linoleum in light buff mottle with green border.

An unusual and pleasing application of color to kitchen walls is the setting of the tiles to ceiling height. The wall tiles, 6x9 of semi-mat glaze, are set vertical, straight joint, and contrast effectively with the white mat glaze of the 6x6 tile used for the drainboard. Selection of that size of tile reduced the number of joints on the drainboard. A vitreous cap of white was also specified.

The attractive effect is exemplified in the pleasantness of the corner window and corner sink, the arrangement being modern and colorful as well as in harmony with the type of dwelling.

The Kraft home was recently completed from plans by William Edward Schirmer, architect.

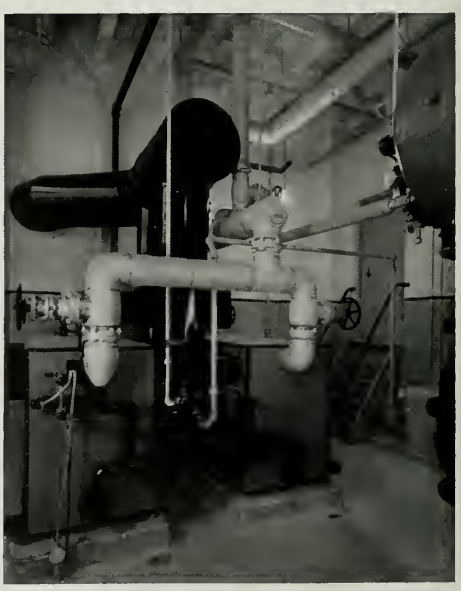
FARMERS AUTOMOBILE INTER-INSURANCE EXCHANGE, LOS ANGELES
Walker and Eisen, Architects

MODERN TREATMENT FOR LOS ANGELES OFFICE BUILDING

THE Farmers Automobile Inter-Insurance Exchange Building, recently completed on Wilshire Boulevard, Los Angeles, is a dignified adaptation of modern commercial design, utilizing for the most part structural requirements as architectural finish. Placed 25 feet from the street, the building allows for a program of well-studied landscape gardening and planting, as well as generous lawn stretches between streets and building. The approach to the main entrance has been developed at the street corner, this walk rising in an easy slope to the broad portico and doorways of the institution.

Upon the street fronts of the third floor are provided well-spaced executive offices, accounting department, endorsement department and sales department. A substantial portion of the roof, which has been designed as a roof garden, will afford outdoor recreational and luncheon facilities for employees.

Fresh air, and warmed air during winter months, is provided by a gas-fired, full mechanical heating and ventilating system. All walls and ceilings have been acoustically treated for efficient working conditions, and extensive but simple decorative schemes have been carried out on all floors, together with highly efficient lighting devices to afford maximum eye comfort.



AUTOMATIC GAS BOILER SUPPLIES STEAM TO INDIRECT HEATING AND VENTILATING SYSTEM

ARCHITECTS' BULLETIN

Issued For

THE STATE ASSOCIATION OF CALIFORNIA ARCHITECTS

Northern Section

STATE ASSOCIATION MEMBER
OF THE
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Editor

Harris C. Allen

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PROFESSIONAL RELATIONS

THE proposed A. I. A. documents on Standards of Practice, recently mentioned in the Bulletin, came at a timely moment. One of the important committee reports accepted by the 1937 Convention and referred to the Executive Board for study and appropriate action, dealt to a considerable extent with the essentials of just this subject.

The Professional Relations Committee of the Southern Section, by its chairman, Gordon B. Kaufmann, submitted a report which brought lively discussion not only for its frank criticism of conditions, but also for its definite suggested program, a constructive one, if somewhat daring. It dealt with the relations between architects and clients, between architects and other branches of the building industry, and between architects themselves.

The definite suggestions were:

(1) Arrangement for weekly newspaper articles to be written by competent architects paid for their time, dealing with various phases—both good and bad—of professional activities.

(2) Advertisements in weekly papers publicizing the address of an office where information would be available regarding architects' functions and the proper method of selecting architects.

(3) The employment of a permanent working secretary to maintain proper relations with newspapers, corporations and political subdivisions, much as the executive secretaries of trade associations now do.

It is obvious that these suggestions entail a considerable expenditure of funds, and although the financial situation of both sections is fairly healthy and is improving steadily, it would hardly appear feasible to carry out the entire program at present. However, the Executive Board is authorized by the Convention to take what action it deems proper, and the publication of the new A. I. A. documents will make informative literature available for this purpose.

TIME TO BUILD

So says a well-known national producer as the result of a survey which brought out certain points—one, that building costs will be higher, or certainly not lower; two, that the let-up now being experienced is prompting closer figuring on bids and terms of financing; and three, that desirable rental properties are scarce and rents will continue to increase. The general conclusion was reached that the present lull constitutes a definite opportunity for the man who is able to start building now—and financing is relatively easy to obtain. Hopeful home-builders please be given notice.

AN HONOR

Of double interest is the appointment of Albert J. Evers, F. A. I. A., as a Director of the Federal Home Loan Bank, 12th District. This is a gratifying recognition both of Mr. Evers' own high professional standing, and of the importance of the architectural profession in the campaign for better housing; for this appointment is one of those few made by the Government "For the Public Interest." Other Directors are elected by the member banks. This institution is to its members,—banks and Federal Savings and Loan Societies—what the Federal Reserve Bank is to national banks which are members of the Federal Reserve system. Our heartiest congratulations to Mr. Evers, and to the architects whom he represents.

MARIN COUNTY

Negotiations have been proceeding with authorities in the several cities which have ordinances in question, and it now appears that the best way to settle the constitutionality of these ordinances which bear upon the rights of architects and engineers—and any citizens who wish to build—will lie in a so-called "friendly" test case. Arrangements for a suitable case are under way.

This may seem to be a slow method, but if the facts can once be clearly brought out in court and a clear-cut decision made for our case, it will be only a matter of routine to secure amendment of these ordinances.

The Executive Board considers this an extremely important matter. If, through some legal technicality, the ordinances should be construed as not violating State constitutional provisions, the necessity would arise to correct such a situation, at the next session of the Legislature, for the protection of both the public—that is, citizens who plan building operations—and the professions of architecture and engineering, in the legitimate conduct of their practice.

OFFICE FORMS

A fresh supply of the Association's standard certificates for payment and change orders, in their recently amended and improved forms, is now on hand at the Association office, 557 Market Street, San Francisco. These may have firm name and address printed at top if so desired. They are furnished in pad form. Prices, of course, are maintained at cost level.

"OPERATIVE" BUILDING

From a letter published in a local paper last month, we quote the following interesting excerpt:

"Some of the things an Oakland builder is up against: He buys a piece of land, surveys it into lots. The Planning Commission, City Engineer, County Engineer, County Supervisors, must all pass on his map if more than five lots—plenty of delay and overhead; then pay State Real Estate Department $50 for permit to sell. Architect wants 4 per cent of cost of house for plan. Building Department now demands another survey (cost $25) of each lot before permit is issued. Permit now costs around $25, formerly $3. Three charges for title insurance, one when he buys the lot, one when he borrows to build, one when he sells, total cost around $100. Takes real nerve to face all this and then produce a beautiful and well built five or six room house at a cost of around $5000, easy terms."

Our only comment is that we feel sure the architect got the full worth of his services.

FELLOWSHIPS FOR ARCHITECTS

Ten fellowships from the income of the Langley Foundation will be awarded by the American Institute of Architects this year, up to $1500 each. They will allow recipients to spend one year in study and travel.

Nominations of candidates (to be young and deserving architects) can be made by architects only, to Albert J. Evers, F.A.I.A., Regional Director, A.I.A., 525 Market St., San Francisco. Full particulars can be obtained from him. All nominations must be submitted before March first.

THE SEVENTIETH CONVENTION

The Seventieth Convention of American Institute of Architects and the State Associations, will be held in New Orleans, Louisiana, on Tuesday, Wednesday, Thursday, and Friday, April 19, 20, 21 and 22.

The dates of the convention are earlier than usual. They were selected with due regard to the probability of enjoyable weather and to the certainty of adequate hotel accommodations.

The development of the program of the convention—both formal and informal—was left by the the Board with the President, Secretary, Director Goldstein and the Convention Committee.

Special attention is called concerning the number of delegates to be accredited to the convention. It is important that the members of each Chapter elect their delegates well in advance and that the State Associations do the same so that all delegates who go to New Orleans will be prepared to reflect the views of those whom they represent in acting on the matters to be considered and voted upon by the convention.

Chapter and State Association presidents are charged with an important duty in this respect.

ADDS TO BUILDING STAFF

L. W. Lane, publisher of "Sunset Magazine," San Francisco, announces appointment of George A. Sanderson as Building Editor of "Sunset." Mr. Sanderson, a graduate of Yale College, and the School of Architecture at Massachusetts Institute of Technology, has done architectural work both in the East and on the Pacific Coast.

With the Architects

CHURCH ARCHITECTURE

The North American Conference on Church Architecture will hold an all-day public convention March 4 at the Cathedral of St. John the Divine, New York. The problems of modern American church design and plan will be discussed by experienced architects. Special attention will be given to the use of the arts in church building. John Angel, famous sculptor, will show a moving picture on sculpture and Maurice Lavanoux, of the Liturgical Arts Society, will speak on the demands of worship.

IN NEW OFFICES

William Wilson Wurster and Warren C. Perry have moved to their new studio on the top floor of the Newhall Building, California Street, San Francisco. The entire pent house is occupied by the two firms who may be said to be the first architects in San Francisco to occupy quarters of this type. The drafting room is an inspiration while the consulting and private offices of both Mr. Wurster and Mr. Perry are outstanding for convenience and attractiveness.

ADDITION TO NURSING HOME

Roland I. Stringham and Albert J. Evers, 525 Market Street, San Francisco, are preparing working drawings for a $45,000 addition and general remodeling of the building at 2750 Geary Boulevard, San Francisco, owned and occupied by the Garden Nursing Home. An additional floor will be built on part of the structure. A. V. Saph is the structural engineer and George E. Atkins, mechanical engineer.

SACRAMENTO OFFICE BUILDING

From plans by Architect George C. Sellon, California State Life Building, Sacramento, the California Almond Growers' Association will build a two-story brick and steel office building at 18th and "C" Streets, Sacramento. Specifications call for an asbestos roof and steel sash.

ARCHITECT TO BUILD

Charles F. Masten, of Masten & Hurd, 442 Post Street, San Francisco, has completed plans for a home which he will build for himself on San Marcos Avenue, San Francisco, at an estimated cost of $7500. Construction will be frame and stucco.

GRAMMAR SCHOOL BUILDING

Plans have been completed by Architect William H. Rowe, 351 California Street, San Francisco, for a one-story frame grammar school building at Spreckels, Monterey County, to cost $75,000. There will be seven classrooms and an auditorium.

PERSONALS

Nelson J. Morrison, junior member of Mock and Morrison, architects, Perkins Building, Tacoma, is enjoying a six-week vacation trip to Mexico City. He went by train to San Francisco, where he boarded a boat for Acapulco.

A. Glenn Stanton, Portland, active in residential design, recently returned from a two-weeks vacation trip to Long Beach.

Carl Heilborn, whose pencil sketches were published in The Architect and Engineer several years ago, has found new laurels drawing street scenes, houses, etc. for moving picture sets. His latest achievement is a set of drawings, including the famous O'Leary barn, the burning of which started the great Chicago fire, for the new historical picture, "In Old Chicago."

TO REMODEL LOFT BUILDING

A two-story loft building in Merced, owned by the Golden State Theater Company of San Francisco, is being remodeled into apartments, from plans by A. A. Cantin, 64 Pine Street, San Francisco. There will be nine 1, 2 and 3-room apartments.

TRACY SCHOOL BUILDING

A $50,000 grammar school building has been authorized by the Tracy Grammar School District. Plans by Elmore G. Ernst, Stockton, await State Engineer's approval. Exterior will be stucco with an alternate bid for brick veneer.

OFFICE AND FACTORY REMODEL

The National Lead Company will remodel its office and factory at 2240-24th Street, San Francisco, the work to include a new main entrance and alterations to the executive offices on the fifth floor. Arnold Constable is the architect.

$100,000 WAREHOUSE

At Beale and Bryant Streets, San Francisco, the Matson Navigation Company will build a one-story steel and corrugated iron warehouse. Kaj Theill, 580 Market Street, San Francisco, is the structural engineer and Lindgren-Swinerton, Inc., the contractors.

OPENS BRANCH OFFICE

Howard G. Elwell announces the opening of a branch office at the Building Mart, 169 N. La Brea Avenue, Los Angeles, with Jay Wollfe in charge. Mr. Elwell's main office is located at 803 Architects' Building.

PIEDMONT RESIDENCE

A $25,000 residence will be built on Hampton Road, Piedmont, for J. Paul St. Sure, from drawings by Clarence W. Mayhew, of Oakland.

PAROCHIAL SCHOOL

A two-story reinforced concrete parochial school having nine classrooms and an auditorium, is being designed by Henry A. Minton, 525 Market Street, San Francisco for St. Catherine's Parish, Burlingame. The building will be two stories, reinforced concrete, slate roof, steam heat and oil burner.

GRAMMAR SCHOOL BUILDING

The Beardsley Grammar School District has awarded a contract aggregating close to $100,000 for a ten-room school house and cafeteria to be built near Bakersfield, from plans by Symmes & Williard, Haberfelde Building, Bakersfield.

TO REMODEL STORE BUILDING

Construction is under way from plans by Will P. Day, Financial Center Building, San Francisco, for alterations to the store and loft building owned by the Mountain View Cemetery Association at 182 Second Street, San Francisco. The work will cost $15,000.

TWO SAN MATEO COUNTY DWELLINGS

Birge M. & David Clark of Palo Alto have preliminary drawings in progress for two residences, both to be built in Atherton, San Mateo County, at approximate costs of $25,000. and $14,000, for unnamed clients.

COUNTY HOSPITAL ADDITIONS

Bids are being taken by the Supervisors of Kern County for additions to the Kern County General Hospital in Bakersfield, estimated to cost $200,000. Bids close January 24th. The architect is Charles H. Biggar.

ALAMEDA GRAMMAR SCHOOL

A twelve-classroom unit is to be built to the Mastick Grammar School at Santa Clara and Bay Streets, Alameda. The architects are Kent & Hass, 525 Market Street, San Francisco.

$10,000 RESIDENCE

Clarence W. Mayhew has completed working drawings for a $10,000 house near San Rafael for William P. Morgan. House will be equipped with an oil burner.

THEATER REMODEL

Work has started on remodeling the Real Joy theater in King City from plans by Architects Miller & Warnecke, Financial Center Building, Oakland.

HOSPITAL BUILDING ADDITION

The Santa Fe Railroad Company, Kerckhoff Building, Los Angeles, will spend $500,000 on additions to the company's hospital at 601 South San Luis Street, Los Angeles.

MORE EXPOSITION ARCHITECTS

Architects from whose drawing boards will come plans for the $5,000,000 California State exhibit at the Golden Gate International Exposition, have recently been announced.

The architects, and the regions in which they will specialize, are:

H. C. Chambers, Southern California; Henry Howard, Sacramento Valley; Ernest Born, San Joaquin Valley; Irving Morrow, Alameda and Contra Costa; Otto A. Deichmann, Shasta Region; Ernest E. Weihe, Mission Trails; Bernard A. Maybeck and William G. Merchant, Redwood Empire, and Clarence Tantau, San Francisco.

All, with the exception of H. C. Chambers, are San Francisco men. They will work under direction of Timothy L. Pflueger, chief consulting architect for the exhibit. Eight buildings will be included in the California group.

DESIGNING BOLIVIA HOSPITAL

Plans for a modern, 40-bed hospital to be built in LaPaz, Bolivia, on a hill overlooking the residential section, are nearing completion in the office of Stanley T. Shaw, Washington Building, Tacoma, who was retained by Charles Arthur Irle, missionary architect for the owner, the Board of Foreign Missions of the Methodist Episcopal Church of the United States, 150 Fifth Avenue, New York City. The building will be of reinforced concrete with adobe walls and will cost $100,000.

FRIGIDAIRE SALES DRIVE

Frigidaire division of General Motors presented its 1938 line of electric refrigerators and electric ranges to a meeting of some 1500 dealers and salesmen in late January. The meeting took place in the Oakland Auditorium and included a series of merchandising and sales promotion talks by Frigidaire executives, a one act playlet, two moving pictures and luncheon served in the main auditorium. Ellsworth Gilbert, Sales Manager of Dayton, Ohio, was the principal speaker.

GREAT FALLS ARCHITECT BUSY

Plans for an airport administration building, several residences and small commercial buildings are being prepared in the office of Architect A. N. McIver of Great Falls, Montana, for construction during 1938 in the north central metropolis of the Treasure State. The airport building will consist of two units estimated to cost $45,000.

TO REMODEL HOTEL

Construction is under way from plans by Douglas D. Stone and Hertzska & Knowles for extensive remodeling of the Empire Hotel at McAllister and Leavenworth Streets, San Francisco. The total cost will exceed $500,000.

With the Engineers

STRENGTH OF RIVET-HEAD BOLTS IN OLD CONCRETE

Sixty members of the Structural Engineers Association of Northern California attended the regular monthly dinner meeting February 1 at the Engineers' Club, San Francisco, with President Harold B. Hammill presiding.

At the close of the dinner a very timely and inspiring address entitled "Abraham Lincoln" was given by Herman Weinberger, a San Francisco attorney.

C. A. Whitton, engineer for the Oakland Board of Education, spoke on certain development work undertaken by his department to determine the effectiveness of a rivet head bolt used as a dowel or anchor bolt in old concrete when grouted into a drilled hole. From a series of tests made by the Abbot Hanks Testing Laboratory, it was concluded that a $\frac{5}{8}$" rivet head bolt embedded in a hole 9" in depth rammed full with a 1:1 dry grout, would safely develop sufficient anchorage for the usual working stresses used in design.

T. F. Chace, engineer for the Berkeley Board of Education, reviewed some tests that he had sponsored to determine the shear value of bolts in wood to concrete assemblies. From the results of the tests made so far it appeared that for the type of assembly tested, a working value of 2000 pounds could be safely used for a $\frac{5}{8}$" bolt grouted into a hole approximately $1\frac{1}{8}$" in diameter.

The program for the evening was concluded with a very instructive sound picture entitled "Making Structural Steel Shapes," furnished and shown by Mr. Nickerson and Mr. Farwell for the Bethlehem Steel Company.

Following the program a regular business session was held with Vice President Gorman in charge of committee reports.

HEAR TALK ON ALUMINUM

In addition to seating this year's board of officers, the Structural Engineers Association of Northern California at the January meeting listened to an interesting talk by E. P. Burton of the Aluminum Company of America, on the subject, "Examples and Considerations in the Design of Aluminum Alloy Structures." He stressed the point that the question of when and where to use aluminum alloy in structures is a problem in Engineering Economics. The light weight of this material (approximately one-third the weight of steel) may be utilized to lower operating costs or to increase the capacity of an existing structure or machine. Its use is justified where it will compensate for the increased cost of the aluminum alloy. Examples of the use of the material, to illustrate this point, were presented in a series of slides.

It was evident from the slides that structural aluminum is particularly adaptable to construction equipment such as steam shovels, clam shell buckets, truck bodies, long booms, etc., where the difference in weight of equipment can be translated into increased capacities at a constant operating cost. In a similar manner, with capacities constant, operating costs may be reduced. The application of structural aluminum in structures other than moving ones is largely limited to increasing capacity of existing structures. The floor and deck framing of an existing bridge were shown as an example of this kind.

In a discussion at the close of the address, Mr. Burton answered many questions.

SOUTHERN ENGINEERS ELECT OFFICERS

The Structural Engineers' Association of Southern California has installed the following new officers:

Fred J. Converse, professor at California Institute of Technology, president; J. E. Shield, Board of Fire Underwriters of the Pacific, vice-president; R. W. Binder, Bethlehem Steel Corporation, new director; C. D. Wailes, Jr., Portland Cement Association, new director; Harold A. Nelson, structural engineer, secretary-treasurer; J. H. Davies and J. E. Byers, "hold-over" directors.

D. L. Narver, retiring president, automatically goes to the board of directors.

At the January 5 meeting the program consisted of a talk by W. A. Klikoff, associate aero engineer of the Bureau of Air Commerce and instructor in aircraft structures at the California Institute of Technology. Mr. Klikoff discussed phases of modern aircraft design, stressing particularly the structural materials used and the design methods followed.

STANDING COMMITTEES IN SOUTH

The following standing committees of the State Association of California Architects, Southern Section, for the year 1938, have been appointed by President George D. Riddle and approved by the Executive Committee:

Professional Relations—Gordon B. Kaufmann, chairman; George B. Allison, Frank L. Hope, Jr., Howard G. Elwell, E. Keith Lockard.

Financial Relations—David J. Witmer, chairman; Erwood P. Eiden, John Frederic Murphy, Rose Connor, W. F. Staunton, Jr.

Public Relations—Louis N. Crawford, chairman; Merrill W. Baird, Manfred M. DeAhna, Lyle N. Barcume, Floyd Rible, Palmer Sabin, Cecil A. Schilling.

Industrial Relations—Lester H. Hibbard, George E. Gable, Wm. P. Lodge, Natt Piper, Alfred W. Rea.

BOOK REVIEWS

Parkways and Land Values, a volume of 147 pages, fully illustrated with charts, plans, and photographs. Price, $1.50 a copy. Harvard University Press, Cambridge, Mass.

Everyone interested, either directly or indirectly, in the growth and planning and replanning of towns, will welcome the volume, "Parkways and Land Values," by John Nolen and Henry V. Hubbard, which has just been published as the eleventh of the Harvard City Planning Studies. It explains the effect of parkways, the manner in which they are related to other facilities, and how an intelligent person who is willing to use his intelligence can get from these facts valuable and practical conclusions as to what parkways have done in the past and how they ought to be treated in the future as part of the unified community.

In approaching this problem the authors have set down what their experience and special researches have taught them on two questions: (1) what is a parkway, what does it cost, what benefits does it produce, who reaps those benefits and in what proportion? and (2) how can these benefits, through equitable assessment, be made a source of income to the community at large to offset the cost of parkways?

Under the first heading the authors describe and discuss in detail three typical parkway systems, those of the Boston Metropolitan District, Westchester County, and Kansas City. By comparison and analysis and in the light of general experience, they have painted a picture of what a parkway is and does.

In discussing the second question the authors have been obliged to wrestle with the problem of land values,—what makes them rise or fall, how they can be measured, and particularly how it may be possible to disentangle the effects of the parkways alone from the effects of many other influences which operate upon these values.

"Parkways and Land Values" is a practical study based upon the experience of three large communities and designed for the benefit of other communities facing traffic problems.

"CONTEMPORARY ART": By Frederick Kiesler; Published by Louis Scall, 5 Minetta Lane, New York, N. Y. Price, $2.50.

In the history of art and its development in relation to a civilization, eight years is an insignificant period of time. But in the past eight years, we have seen such developments in America at an accelerated pace. Significant progress has been made toward bringing art into the daily lives of our people. Distribution as well as production organizations have come to see the need for applying good design to products and their display. It is, therefore, appropriate that there again be made available so valuable a document as "Contemporary Art" by Frederick Kiesler. Because of the current popular interest in the various fields of industrial design, the best barometer of which is the recent development of Industrial Design Schools, such as the Design Laboratory in New York City, and the New Bauhaus in Chicago, and because of the great lack of pertinent material on the subject, this book probably will be welcomed by industrial designers in all fields.

Frederick Kiesler is now Director of the Architectural Laboratory at Columbia University.

Kiesler's ideas are shown in his design principles integrated with a wide variety of problems. He is an architect in the broadest sense of the word. His prediction of 1925 (manifest "City In Space" at the World's Fair in Paris) in regard to town planning and housing (page 48) is today adopted in most progressive planning.

PLASTICS (In the home and school workshop): By A. J. Lockrey; The Governor Publishing Co., New York, N. Y. Price, $2.50.

An interesting book for those who wish to take up a hobby that will create useful and ornamental objects, and a hobby in which the average person can indulge.

This book contains well over a hundred illustrations, directions for working in plastic materials with notes on equipment and tools necessary. Should be an excellent volume for grade school art departments annd for high school and technical school use.

GLASS IN MODERN CONSTRUCTION: Volume brought out by The Pittsburgh Glass Institute; Charles Scribner's Sons, New York, N. Y. Price, $3.75.

Reveals what is being done with glass in modern construction, and what uses glass may be put to in the decorative arts relative to private residences and public buildings.

Very well illustrated and worth the while of every architect who aspires to keep abreast of the modern trends. The beauty of glass as a building medium will intrigue artist, layman and technical man alike.

SHEET METAL WORK: By William Neubecker; American Technical Society, Chicago, Ill. Price, $2.50.

A very useful book for the metal trades worker, shop foreman and the contractor who wishes to know the source and manner of metal work as connected with his job.

The book is graphically illustrated and well arranged.

TIMBER IS A CROP

The Weyerhaueser Timber Company of Tacoma, Washington, has sponsored publication of an interesting essay on timber conservation. The writer handles the subject most entertainingly and along lines that help clarify the slogan, used as a title, "Timber Is a Crop." The subject of timber conservation is one being given much serious thought these days.

SAN FRANCISCO
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HOME DESIGN CONTEST PLANNED FOR SAN FRANCISCO FAIR

A $250,000 international design contest which may revolutionize small home construction and design is contemplated by executives of the 1939 Golden Gate International Exposition.

Both architectural plans and interior decoration design are included in the proposed quarter of a million dollar competition which is expected to attract leading architects, artists and decorators throughout the world. In order that the ideal home of the future may evolve out of the ideas submitted, few restrictions will be put upon the competitors except that the homes be practicable and livable. To encourage the development of all types of homes it is planned to hold separate competitions for various types and sizes of homes.

It is proposed that the home design competitions be divided into three main classifications: (1) Houses to cost not more than $5,000; (2) houses unlimited in cost; (3) prefabricated houses. Under present plans the prefabricated house contest would be held in sections including competitions for steel, pre-cast concrete, wood and other types of houses.

According to present plans each of these house competitions will be sponsored by one or more groups of material manufacturers under the direction of the Exposition. Prize-winning designs will become the property of the manufacturing groups sponsoring the competition.

It is felt that the small homes competition will bring out many novel new styles which find ready acceptance with the public. With the prefabricated houses popularity, low cost and large scale production are all interdependent. In order that winning designs may receive the greatest possible publicity, it is expected that the majority of prize homes will be built on the Exposition grounds to be viewed by millions of visitors during the Exposition.

Among the various groups expected to participate in the home design competitions are the home builders and subdividers of the Bay region; various cement companies; lumber, pressed wood, flexwood and plywood firms; manufacturers of metal lath, tiles, terra cotta, composition flooring, brick, stone, paint, wall paper, finish hardware, and many other concerns.

In the interior decoration competition famous artists of both Europe and America will be invited to participate, according to Edwyn A. Hunt, chairman of the Exposition's design contest committee.

One of the proposed competitions will be along strictly "Americana" lines. "There is no design in modern American," Hunt declared. "It is our hope through this contest to define as 'American' one of the major contemporary movements in the art of home furnishings."

The American design today is a hodge-podge of what various prominent designers think the American theme ought to be, Hunt pointed out, and there is nothing to which an interior decorator can point to as truly American.

Charles Maury, architect, and other committee members including Ben Davis, of S. & G. Gump Company, Marta K. Seronen of the San Francisco Furniture Exchange, F. Eldon Baldauf, modern designer, and Al Lilly have outlined the technical specifications for the competitions which will be submitted to the leading manufacturers of home building materials and furnishings.

WASHINGTON STATE CHAPTER

Officers were elected, educational and business sessions held, followed by dinner and entertainment program, at the annual meeting of the Washington State Chapter at the Olympic Hotel, Seattle, January 22.

Outside speakers included W. R. Wilcox, professor of architecture at the University of Oregon, and W. H. Crowell of Portland, regional director. Stanley F. Smith, head of the architectural engineering department at Washington State College, was a guest.

Officers for 1938 are as follows: President, B. Marcus Priteca, Seattle; first vice-president, Floyd A. Naramore, Seattle; second vice-president, Ernest T. Mock, Tacoma; third vice-president, Henry Bertelsen, Spokane; secretary, Victor N. B. Jones, Seattle; treasurer, Clyde Grainger, Seattle; director for three-year term, William J. Bain, Seattle, to succeed Donald Thomas, Seattle.

OREGON CHAPTER

"How's Your Housing?" was the theme of the annual meeting, January 18, of the Oregon Chapter, A. I. A., in the Pompeian Room, Congress Hotel, Portland. Jamieson Parker and Folger Johnson conducted an informal discussion on aspects of the Federal housing legislation. Ernest Tucker presided.

Officers for 1938 were elected as follows: President, Leslie D. Howell; vice-president, George Howell Jones; secretary, Roi L. Morin; treasurer, Joseph W. Heiler. The new trustee nominee is John Schneider, the retiring secretary. The retiring trustee is Jamieson Parker. Holdover trustees are Hollis Johnston and Fred Aandahl.

BANK BUILDING REMODEL

Work is under way in remodeling the Anglo-California Bank Building at Sansome and Market Streets, San Francisco, from plans by W. W. Wurster.

HEATING and VENTILATING ENGINEERS HOLD 44th ANNUAL MEETING

STRESSING the physiological reactions of persons to varying conditions of indoor atmosphere with a view to establishing improved standards of air conditioning, heating and ventilating practice, the American Society of Heating and Ventilating Engineers held its 44th annual meeting in New York, January 24-28 with a record attendance from all parts of the country.

Of sixteen technical papers presented at the meeting, six were devoted to analyzing the reasons why people feel comfortable or uncomfortable in their air environment. Among the conclusions reached were that somewhat higher indoor summer effective temperatures, more economical to produce, are acceptable to persons in the warmer climate zones of the country and that conversely lower temperatures are more in demand by people in northern sections.

These facts were brought out in a paper on summer cooling requirements by F. C. Houghten, director of the Society's research laboratory, in which tests on office workers in an air conditioned space were discussed and related to studies of a similar nature made in other parts of the country.

Drs. F. K. Hicks and R. W. Keeton, of the College of Medicine, University of Illinois, described tests in which they found that skin temperatures at the extremities of the hands and feet were of significant importance in indicating the response of the body to its atmospheric environment, especially in its loss of heat radiation.

Dr. C. A. Mills, Professor of Experimental Medicine, University of Cincinnati, presented studies tending to show that "human comfort and animal growth and development can be regulated with what seems apparent safety by control of body heat loss through radiant channels alone."

By the use of such methods, yet to be worked out from a practical engineering standpoint, Dr. Mills mentioned three important advantages: (1) It would make possible the elimination of marked contrasts between indoor and outdoor air. (2) The heating and cooling load would be less than that of present air conditioning methods. (3) It might bring about a change to electric energy sources with reduction in insulation needs and possible changes in types of home construction.

Declaring that the major effects of the atmospheric environment upon health and comfort "are directly related to thermal interchange between the human body and that environment;" Dr. C. E. A. Winslow, Professor of Public Health of Yale University and Director of the John B. Pierce Laboratory of Hygiene, presented a scholarly analysis of physiological reactions and sensations of pleasantness under varying atmospheric conditions.

To more exactly define the meaning of a draft, commonly considered the greatest cause of complaint in air conditioning systems, F. C. Houghten, offered data resulting from tests made by subjecting many persons to drafts on the back of the neck and the ankle. He established the range within which drafts are considered "objectionable" and the temperatures, humidity and velocities of air which constitute them.

Among discussions relating to the performance of basic equipment used in heating, ventilating and air conditioning, particular interest centered in a paper describing tests of asbestos insulating air ducts in which claims of improved sound absorbing qualities were made and other questions, including frictional resistance, heat transmission and problems of fabricating ducts from asbestos, were dealt with. This paper was presented by R. H. Heilman, Senior Industrial Fellow of the Mellon Institute of Industrial Research, and R. A. MacArthur, research chemist, The Philip Carey Mfg. Co.

"Condensation within Walls" was another paper of outstanding interest presented by Professor F. B. Rowley, Director of the Engineering Experiment Station, University of Minnesota and his associates, Messrs. A. B. Algren and C. E. Lund. The marked advances in the science of air conditioning and building construction has presented a troublesome problem caused by the condensation of moisture or the formation of frost in various parts of buildings wherein relatively high humidities are maintained.

Professor Rowley described an unique research project in which miniature test buildings were erected and subjected to various outside and inside air conditions to determine the effect of condensation within the walls and to devise methods for its correction.

He concluded that a solution of the problem rests on a better understanding of the effects of vapor pressures and that "vapor barriers" should be placed on the inside or warm side of a house. Use of high vapor resistance barriers, combined with an intelligent selection of insulating materials should go far to eliminate such condensation troubles in future, Prof. Rowley indicated.

Among other papers delivered at the meeting were the following "Application and Economy of Steam Jet Refrigeration to Air Conditioning," by A. R. Mumford and A. A. Markson; "Cooling Tower Equipment and its Relation to Water Conservation" by S. I. Rottmayer; "Fundamentals Developed from Twenty Years of Research by the National Warm Air Heating and Air Conditioning Association" by A. P. Kratz; "Air Distribution from Side Wall Outlets" by D. W. Nelson and D. J. Stewart.

Also, "Studies on Bacterial Control in Air Conditioning" by T. S. Carswell, J. D. Fleming and H. K. Nason; "Control of Air Conditioning in Large, Medium and Small Buildings" by W. E. Zieber and S. F. Nichol; "Effects of Artificial Lighting on Air Conditioning" by Walter Sturrock; "Comparative Analysis of Office Building Air Conditioning Systems" by J. R. Hertzler; "Ventilating the Lincoln Vehicular Tunnel" by C. W. Murdock; "Study of Methods of Control and Types of Registers as Affecting Temperature Variations in the Research Residence" by A. P. Kratz and S. Konzo.

Estimator's Guide

Giving Cost of Building Materials, Wage Scale, Etc.

Amounts given are figuring prices and are made up from average quotations furnished by material houses to San Francisco contractors. 3% Sales Tax on all materials but not labor.

All prices and wages quoted are for San Francisco and the 8ay District. There may be slight fluctuation of prices in the interior and southern part of the state. Freight cartage, at least, must be added in figuring country work.

3ond—1½% amount of contract.

Brickwork—

Common. $40 to $45 per 1000 laid, (according to class of work).

Face, $100 to $110 per 1000 laid, (according to class of work).

Brick Steps, using pressed brick, $1.25 lin. ft.

Brick Veneer on frame buildings, $ .75 sq. ft.

Common f.o.b. cars, $14.00 at yard. Cartage extra.

Face, f.o.b. cars, $45.00 to $50.00 per 1000, carload lots.

HOLLOW TILE FIREPROOFING (f.o.b. job)

3x12x12 in.	$ 84.00 per M
4x12x12 in.	94.50 per M
6x12x12 in.	126.00 per M
8x12x12 in.	225.00 per M

HOLLOW BUILDING TILE (f.o.b. job)
carload lots.

8x12x5½	$ 94.50
6x12x5½	73.50

Building Paper—

1 ply per 1000 ft. roll	$3.50
2 ply per 1000 ft. roll	5.00
3 ply per 1000 ft. roll	6.25
Brownskin, 500 ft. roll	4.50
Brownskin, Pro-tect-o-mat, 1000 ft. roll	9.00
Sisalkraft, 500 ft. roll	5.00
Sash cord com. No. 7	$1.20 per 100 ft.
Sash cord com. No. 8	1.50 per 100 ft.
Sash cord spot No. 7	1.90 per 100 ft.
Sash cord spot No. 8	2.25 per 100 ft.

Sash weights cast iron, $50.00 ton.
Nails, $3.50 base.
Sash weights, $45 per ton.

Concrete Work (material at San Francisco bunkers)—Quotations below 2000 lbs. to the ton. $2.00 delivered.

No. 3 rock, at bunkers	$1.45 per ton
No. 4 rock, at bunkers	1.45 per ton
Elliott top gravel, at bunkers	2.10 per ton
Washed gravel, at bunkers	1.45 per ton
Elliott top gravel, at bunkers	2.10 per ton
City gravel, at bunkers	1.45 per ton
River sand, at bunkers	1.40 per ton
Delivered bank sand	1.00 cu. yd.

Note—Above prices are subject to discount of 2% per ton on invoices paid on or before the 10th of month, following delivery.

SAND

Del Monte, $1.75 to $3.00 per ton.

Fen Shell Beach (car lots, f.o.b. Lake Majella), $2.75 to $4.00 per ton.

Cement (paper sacks) $3.00 bbl., warehouse or delivery.
Car-load lots delivered $2.70, f.o.b. cars $2.52
(Cloth sacks) $3.00 bbl..

Rebate 10 cents bbl. cash in 15 days.

Atlas White, Calaveras White, Medusa White: 1 to 100 sacks, $1.50 sack, warehouse or delivery; over 100 sacks, $1.25; 2% discount 10th of month.

Forms, Labors average $40.00 per M.

Average cost of concrete in place, exclusive of forms, 35c per cu. ft.; with forms, 60c.

4-inch concrete basement floor ..... 12½c to 14c per sq. ft.

Rat-proofing 7½c

Concrete Steps ..... $1.25 per lin. ft.

Dampproofing and Waterproofing—

Two-coat work, 20c per yard.

Membrane waterproofing—4 layers of saturated felt, $4.50 per square.

Hot coating work, $1.80 per square.

Medusa Waterproofing, 15c per lb., San Francisco Warehouse.

Tricocel waterproofing.

Electric Wiring—$12.00 to $15.00 per outlet for conduit work (including switches). Knob and tube average $3.50 per outlet.

Elevators—

Prices vary according to capacity, speed and type. Consult elevator companies. Average cost of installing an automatic elevator in four-story building, $2800; direct automatic, about $2700.

Excavation—

Sand, 60 cents; clay or shale $1 per yard.

Teams, $12.00 per day.

Trucks, $22 to $27.50 per day.

Above figures are an average without water. Steam shovel work in large quantities, less; hard material, such as rock, will run considerably more.

Fire Escapes—

Ten-foot galvanized iron balcony, with stairs, $115 installed on new buildings; $140 on old buildings.

Floors—

Composition Floors—18c to 35c per sq. ft. In large quantities, 16c per sq. ft. laid.
Mosaic Floors—80c per sq. ft.
Dureflex Floor—23c to 30c sq. ft.
Rubber Tile—50c to 75c per sq. ft.
Terazzo Floors—45c to 60c per sq. ft.
Terazzo Steps—$1.60 lin. ft.

Hardwood Flooring (delivered to building)—

⅜x2¼" T & G Maple	$ 88.00 M ft.
1⅛x2¼" T & G Maple	115.00 M ft.
⅞x3½" sq. edge Maple	100.00 M ft.

	1⅛x2¼" T&G	⅜x2" T&G	⅜x2" Sq Ed.
Clr. Otd. Oak	$120.00 M	$ 82.50 M	$1 0 M
Sel. Otd. Oak	99.00 M	69.50 M	84 M
Clr. Pla. Oak	106.00 M	74.50 M	86 M
Sel. Pla. Oak	97.00 M	62.50 M	76 M
Clear Maple	1 1.00 M	100.00 M	
Laying & Finishing	14c ft.	12c ft	10c ft.

Wage—Floor layers, $10.00.
Note—Above quotations are all board measure except last column which is sq. ft

Glass (consult with manufacturers)—

Double strength window glass, 20c per square foot.

Quartz Lite, 50c per square foot.
Plate 75c per square foot (unglazed) in place, $1.00.

Art, $1.00 up per square foot.

Wire (for skylights), 40c per sq. foot.

Obscure glass, 30c square foot.

Glass bricks, $2.40 per sq. ft., in place.

Note—If not stipulated add extra for setting.

Heating—

Average, $1.90 per sq. ft. of radiation, according to conditions.

Warm air (gravity) average $40 per register.

Forced air, average $60 per register.

Iron — Cost of ornamental iron, cast iron, etc., depends on designs.

Lumber (prices delivered to bldg. site).

No. 1 common	$29.00 per M
No. 2 common	27.00 per M
Select O. P. common	34.00 per M
2x4 No. 3 form lumber	26.00 per M
1x4 No. 2 flooring VG	55.00 per M
1x4 No. 3 flooring VG	47.00 per M
1x6 No. 2 flooring VG	60.00 per M
1¼x4 and 6, No. 2 flooring	60.00 per M

Slash grain—

1x4 No. 2 flooring	$43.00 per M
1x4 No. 3 flooring	40.00 per M
No. 1 common run T. & G.	30.00 per M
Lath	5.25 per M

Shingles (add cartage to price quoted)—

Redwood, No. 1	$1.10 per bdle.
Redwood, No. 2	.90 per bdle.
Red Cedar	1.10 per bdle.

Millwork—Standard.

O. P. $85.00 per 1000. R. W., $90.00 per 1000 (delivered).

Double hung box window frames, average with trim, $6.50 and up, each.

Doors, including trim (single panel, 1¾ in. Oregon pine) $8.00 and up, each.

Doors, including trim (five panel, 1⅜ in. Oregon pine) $6.00 each.

Screen doors, $3.50 each.

Patent screen windows, 25c a sq. ft.

Cases for kitchen pantries seven ft. high, per lineal ft., $8.00 each.

Dining room cases, $8.00 per lineal foot.

Labor—Rough carpentry, warehouse heavy framing (average), $17.50 per M.

For smaller work average, $35.00 to $45.00 per 1000.

Marble—(See Dealers)

Painting—

Two-coat work ..... 35c per yd
Three-coat work ..... 45c per yard
Cold Water Painting ..... 12c per yard
Whitewashing ..... 4c per yard
Turpentine, 75c per gal., in 5 gal. cans, and 65c per gal. in drums.
Raw Linseed Oil—$1.02 gal. in bbls.
Boiled Linseed Oil—$1.05 gal. in bbls.
Medusa Portland Cement Paint, 20c per lb.

Carter or Dutch Boy White Lead in Oil (in steel kegs).

	Per Lb
1 ton lots, 100 lbs. net weight	11¾c
500 lbs. and less than 1 ton lots	12c
Less than 500 lb. lots	12½c

Dutch Boy Dry Red Lead and Litharge (in steel kegs).

1 ton lots, 100 lb. kegs, net wt.	11¾c
500 lbs. and less than 1 ton lots	12c
Less than 500 lb. lots	12½c

Rad Lead in Oil (in steel kegs)

1 ton lots, 100 lb. kegs, net wt.	12¼c
500 lb. and less than 1 ton lots	12½c
Less than 500 lb. lots	13c

Note—Accessibility and conditions cause wide variance of costs.

Patent Chimneys—

6-inch	$1.25 lineal foot
8-inch	1.75 lineal foot
10-inch	2.25 lineal foot
12-inch	3.00 lineal foot

Plastering—Interior—

	Yard
1 coat, brown mortar only, wood lath	$0.75
2 coats, lime mortar hard finish, wood lath	.80
2 coats, hard wall plaster, wood lath	.85
3 coats, metal lath and plaster	1.30
Keene cement on metal lath	1.30
Ceilings with ¾ hat roll channels metal lath	.75
Ceilings with ¾ hat roll channels metal lath plastered	1.50
Single partition ¾ channel lath 1 side	.85
Single partition ¾ channel lath 2 sides 2 inches thick	1.50
4-inch double partition ¾ channel lath 2 sides	1.30
4-inch double partition ¾ channel lath 2 sides plastered	3.00

Plastering—Exterior—

	Yard
2 coats cement finish, brick or concrete wall	$1.00
2 coats Calaveras cement, brick or concrete wall	1.35
3 coats cement finish, No. 18 gauge wire mesh	1.50
3 coats Calaveras finish, No. 18 gauge wire mesh	1.75

Wood lath, $7.50 to $8.00 per 1000.
2.5-lb. metal lath (dipped) ..... .17
2.5-lb. metal lath (galvanized) ..... .20
3.4-lb. metal lath (dipped) ..... .22
3.4-lb. metal lath (galvanized) ..... .28
¾-inch hot roll channels, $72 per ton.
Finish plaster, $18.90 ton; in paper sacks.
Dealer's commission, $1.00 off above quotations.
$13.85 (rebate 10c sack).
Lime, f.o.b. warehouse, $2.25 bbl.; cars, $2.15
Lime, bulk (ton 2000 lbs.), $16.00 ton.
Wall Board 5 ply, $50.00 per M.
Hydrate Lime, $19.50 ton.
Plasterers Wage Scale ..... $1.25 per hour
Lathers Wage Scale ..... 1.25 per hour
Hod Carriers Wage Scale ..... 1.10 per hour

Composition Stucco—$1.80 to $2.00 sq. yard (applied).

Plumbing—

From $70.00 per fixture up, according to grade, quantity and runs.

Roofing—

"Standard" tar and gravel, $6.50 per sq. for 30 sqs. or over.
Less than 30 sqs. $7.00 per sq.
Tile, $20.00 to $35.00 per square.
Redwood Shingles, $8.00 per square in place.
Copper, $16.50 to $18.00 per sq. in place
Cedar Shingles, $9.00 sq. in place.
Recoat, with Gravel, $3.00 per sq.
Asbestos Shingles, $15 to $25 per sq. laid.
Slate, from $25.00 to $60.00 per sq. laid according to color and thickness.

Sheet Metal—

Windows—Metal, $1.75 a sq. foot.
Fire doors (average), including hardware $1.75 per sq. ft.

Skylights—(not glazed)

Copper, 90c sq. ft. (flat).
Galvanized iron, 30c sq. ft. (flat).
Vented hip skylights 60c sq. ft.

Steel—Structural

$120 ton (erected), this quotation is an average for comparatively small quantities. Light truss work higher. Plain beams and column work in large quantities $90 to $100 per ton.

Steel Reinforcing—

$80.00 to $120.00 per ton, set.

Stone—

Granite, average, $6.50 cu. foot in place
Sandstone, average Blue, $4.00, Boise $3.00 sq. ft. in place.
Indiana Limestone, $2.80 per sq. ft. in place.

Store Fronts—

Copper sash bars for store fronts, corner center and around sides, will average 75c per lineal foot.
Note—Consult with agents.

Tile—Floor, Wainscot, etc.— (See Dealers)

Asphalt Tile—18c to 28c per sq. ft. installed.

Venetian Blinds—

40c per square foot and up. Installation extra.

THE BUILDERS' EXCHANGE OF SAN FRANCISCO STANDARD WAGE SCALE

For mechanics employed on construction work in the Bay Region. Effective September 1, 1937

CRAFT	Journeymen Mechanics
Asbestos Workers	$ 8.00
Bricklayers (6h-5d)	10.50
Bricklayers' Hodcarriers (6h-5d)	6.75
Cabinet Workers (Outside) (5d)	8.00
Caisson Workers (Open)	6.40
Carpenters (8h-5d)	10.00
Cement Finishers (8h-5d)	10.00
Cork Insulation Workers (8h-5d)	9.00
Electric Workers (8h-5d)	11.00
Electrical Fixture Hangers	8.00
Elevator Constructors	10.40
Engineers, Portable & Hoisting	9.00
Glass Workers (8h-5d)	9.68
Hardwood Floormen	9.00
Housesmiths, Architectural Iron (Shop) (8h-5d)	9.00
Housesmiths, Architectural Iron (Outside) (8h-5d)	10.00
Housesmiths, Reinforced Concrete or Rodmen (8h-5d)	10.00
Iron Workers (Bridge and Structural) Including Engineers (8h-5d)	12.00
Laborers, Building (8h-5d)	$ 6.00
Laborers, Common (8h-5d)	6.00
Lathers, Channel Iron (6h-5d)	9.00
Lathers, All Others	9.00
Marble Setters (8h-5d)	10.50
Marble Setters' Helpers (8h-5d)	5.00
Millwrights	9.00
Model Makers ($1.50 per hr-6h)	9.00
Modelers ($2 per hr-6h)	12.00
Model Casters	7.20
Mosaic and Terrazzo Workers (Outside)	9.00
Painters (7h-5d)	8.50
Painters, Varnishers and Polishers (Outside)	9.00
Pile Drivers and Wharf Builders	9.00
File Drivers' Engineers	10.00
Plasterers (6h-5d)	10.00
Plasterers' Hodcarriers (6h-5d)	7.50
Plumbers (8h-5d)	11.00
Roofers, Composition (8h-5d)	9.00
Roofers, All Others (8h-5d)	8.00
Sheet Metal Workers (8h-5d)	10.00
Sprinkler Fitters	10.00
Steam Fitters (8h-5d)	$11.00
Stair Builders (8h-5d)	9.00
Stone Cutters, Soft and Granite (8h-5d)	8.00
Stone Setters, Soft and Granite	12.00
Stone Derrickmen	9.00
Tile Setters (8h-5d)	11.00
Tile Setters' Helpers (8h-5d)	6.50
Tile, Cork and Rubber (8h-5d)	9.00
Welders, Structural Steel Frame on Buildings	11.00
Welders, All Others on Buildings	9.00
Dump Truck Drivers, 2 yards or less	6.00
Dump Truck Drivers, 3 yards	6.50
Dump Truck Drivers, 4 yards	7.00
Dump Truck Drivers, 5 yards	7.00
Dump Truck Drivers, 6 yards	7.50
Truck Drivers of Concrete Mixer Trucks:	
2 yards or less	6.50
3 yards	7.00
4 yards	7.50
5 yards	7.50
6 yards	8.00

GENERAL WORKING CONDITIONS

1. Eight hours shall constitute a day's work for all crafts except as otherwise noted.
2. Plasterers' Hodcarriers, Bricklayers' Hodcarriers, Roofers' Laborers, and Engineers, Portable and Hoisting, shall start 15 minutes before other workmen, both at morning and at noon.
3. Five days, consisting of not more than eight hours a day, on Monday to Friday inclusive, shall constitute a week's work.
4. Transportation costs in excess of twenty-five cents each way shall be paid by the contractor.
5. Overtime shall be paid as follows: For the first four hours after the first eight hours, time and one-half. All time thereafter shall be paid double time. Saturdays (except Laborers), Sundays and holidays, from 12 midnight of the preceding day, shall be paid double time.
6. On Saturday, Laborers shall be paid straight time for an eight-hour day.
7. Where two shifts are worked in any twenty-four hours, shift time shall be straight time. Where three shifts are worked, eight hour's pay shall be paid for seven hours on the second and third shifts, allowing one-half hour for lunch.
8. All work, except as noted in paragraph 9, shall be performed between the hours of 8 a.m. and 5 p.m.
9. In emergencies, or where premises cannot be vacated until the close of business, men then reporting for work shall work at straight time. Any work performed on such jobs after midnight shall be paid time and one-half up to four hours of overtime and double time thereafter, provided, that if a new crew is employed on Saturdays, Sundays or holidays which has not worked during the five preceding days, such crew shall be paid time and one-half.
10. Recognized holidays to be: New Year's Day, Decoration Day, Fourth of July, Labor Day, Admission Day, Thanksgiving Day, Christmas Day.
11. Men ordered to report for work, for whom no employment is provided, shall be entitled to two hours' pay.

Sloane-Blabon Linoleum Scores Again!

MAIN LOBBY, McCLATCHY SENIOR HIGH SCHOOL, SACRAMENTO, CALIF.

Starks & Flanders, Sacramento
Architects

K. E. Parker Co., San Francisco
General Contractors

H. W. Rivett Co., Sacramento
Linoleum Contractors

Sloane-Blabon Corporation is once more to the front with a convincing demonstration for bringing into reality difficult and unique decorative schemes proposed by the discriminating architect.

Chosen for its proven long wearing and highly decorative qualities, Starks & Flanders selected **SLOANE-BLABON Jaspe linoleum** to surface 55,000 square feet of floor space in the McClatchy High School. Then, to complete the rich, distinctive wall and ceiling treatment of the main lobby, illustrated above, they specified an elaborate reproduction of the plot plan of the school buildings, made up of varied colors of plain linoleum, to be inset in the main lobby floor.

Drawing upon the wide range of feature colors available in their line, SLOANE-BLABON'S Contract Department submitted a detailed miniature inset to satisfy the architects' demand for complete color harmony, and with skilled precision the linoleum contractors, H. W. Rivett Co., made the installation.

Here is another reason why architects and builders every where, to create that elusive "different" effect so important in modern decoration, specify Sloane-Blabon Linoleum.

Sloane-Blabon

C O R P O R A T I O N

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ARCHITECT SAYS NEW APPROACH IS NEEDED TO MEET LOW COST HOME PROBLEM

THE American Institute of Architects, through its Housing Committee, of which Walter R. McCornack of Cleveland is chairman, has adopted a 1938 program which aims, with the cooperation of other groups in the building industry, "to solve the problem of the low-cost home by removing the barriers which have closed a vast market." The magnitude of the task makes government subsidy "out of the question," Mr. McCornack declares.

Studies by the Institute disclose that a serious housing shortage seems imminent. Substantial progress toward relieving this situation during the present year is not assured, according to Mr. McCornack, who outlines the steps that must be taken before a real start can be made.

"There must be a radical reduction in all charges and costs," he says. "The following points of attack will not be harmful to any group or individual, but will bestow upon them fair profits and indirect benefits due to the larger number of people who will be living in decent homes:

"There should be a revision of building codes, elimination of price fixing at exorbitant levels, outlawing of jurisdictional disputes, cleaning the racketeers out of industry, the permission to use new methods of construction which will reduce costs, elimination of unnecessary middlemen, purchase of land at its use value, revision of taxation methods and lowering the interest rates."

The problem will not be solved by one element in the building industry accusing the other of holding costs up, but by all of them cooperating toward a common end—that of entering a market now closed against it, Mr. McCornack asserts.

"The American Institute of Architects is striving to secure for the small home owner proper plans and specifications with supervision for a price he can afford to pay," he continues. "All the architects ask is that other elements in the building industry join them in a mass attack on a condition which means so much to this country."

The fact that a serious housing shortage seems imminent is hopeful for the building industry since so many other types of construction are not needed at the present time as a result of previous over-building in other fields, Mr. McCornack points out.

"In spite of the shortage in housing and the very obvious need for rebuilding or replanning the slum areas of many of our cities, there has not been any considerable amount of housing done, and the prospects of any considerable amount this year is not assured. When a shortage of housing is announced the man in the street assumes that all kinds of housing will be involved in the work to be done.

"Until recently there has not been available any very reliable data on just what the market is and what class of people will occupy the houses needed. The National Housing Committee recently released a report entitled 'The Housing Market' which clearly sets forth the market limitations. These limitations are 2,000,000 dwelling units for families unable to pay more than $30 per month rent and with 78 per cent of the number unable to pay more than $25 per month rent.

"Translated into capital cost, including land, landscaping and incidental charges, this means 2,000,000 dwelling units carrying a construction cost of not more than $3,000 for a five-room house for the top of the group, but with the average cost per unit not in excess of $2,500, with a goodly number at $2,000.

"With these facts staring us in the face it appears highly improbable that much housing for this great group of our people will be done under present methods. This opinion is further reinforced by the results of the government's housing program where costs were so high that even with a 45 per cent subsidy the rents were still between $6 and $7 per room, requiring further subsidy if slum dwellers are to be helped.

"The American Institute of Architects is interested in developing a program pointing toward a solution of the low-cost home problem, and it is apparent that a new approach must be devised and concessions made by all branches of the industry in order to serve a very large market now beyond our reach and of such magnitude as to make government subsidy out of the question."

MODEL HOMES AT S. F. FAIR

Homes of the West will be displayed in a $100,000 model home exhibit by the lumber interests of the Pacific Coast. Sponsoring this exhibit, which will occupy 90,000 square feet of space at the $50,000,000 Pageant of the Pacific, will be the California Redwood Association, the West Coast Lumbermen's Association, the California Nursery Company and associations, and several other trade groups.

This model home display will show designs particularly suited for Western building materials and Western locale. Located in an area adjoining the Homes and Gardens Building, the model homes section will cover the space of two city blocks. Each building will be landscaped to give it the proper surroundings for the particular home idea.

Not only is this space one of the largest outdoor contracts yet signed by the exposition authorities, but the largest exhibit enterprise of its kind ever undertaken by the lumber industry and its nursery associates. Other lumber groups besides West Coast and California Redwood will be invited to participate, as well as other nursery and home accessory companies.

A FELLOWSHIP AND SCHOLARSHIPS

Applications are invited by the College of Architecture, Cornell University, for the annual award of a Fellowship and Scholarships as follows:

A University Fellowship—Open to a graduate student in Architecture or Landscape Architecture. The Fellowship pays $400 and exempts the holder from the payment of tuition.

Three Graduate Scholarships—Open to graduate students in Architecture, Landscape Architecture or Fine Arts. These scholarships exempt the holders from payment of tuition.

The University fellow and the graduate scholars must be enrolled in the Graduate School of Cornell University and be candidates for an advanced degree. To obtain admission to the Graduate School the applicant must have received a baccalaureate degree, the requirements for which are substantially the same as are those for the corresponding degree at Cornell. In general this means a five-year course. The applicant must also present evidence, by means of his academic record or otherwise, of ability to pursue advanced study profitably.

Five Scholarships in the College of Architecture—Open to graduates of four-year courses in Architecture, Landscape Architecture or Fine Arts. These scholarships have a value of $250 each and may be held until the student has completed the requirements for the baccalaureate degree as given at Cornell. These scholarships place the holder on the same tuition basis as are members of the Graduate School.

Six First Year Scholarships—Open to students registered for their first year at Cornell University and in the College of Architecture. These scholarships pay one half of the first year's tuition and are awarded primarily on the basis of the student's need for financial assistance.

Further information and forms of application can be obtained from The Dean, College of Architecture, Cornell University, Ithaca, New York.

BOOKLETS ON LIGHTING

Four booklets on Lighting are being distributed by the Pacific Coast Electrical Bureau, 447 Sutter Street, San Francisco. "Light In the Home" is an unusually fine booklet—the best we have seen on home lighting, being exceptionally informative. "Light Through the Ages" is an interesting historical story of the development of lighting. These booklets will be distributed free to inquirers as long as the supply lasts. The Bureau announces it will continue to distribute "Key to Electrical Convenience In Your Home," a booklet devoted to home wiring, and "Electric Service With Safety."

PORTERVILLE CHURCH

To replace its burned edifice, the First Congregational Church, Porterville, will spend $15,000 for a frame auditorium and social hall from drawings by Fred L. Swartz of Fresno.

BOULDER DAM AND THE GREAT PYRAMID

The following address was delivered by John C Page, Commissioner of Reclamation, at the unveiling of the Memorial Plaque to the workmen who constructed Boulder Dam:

"Boulder Dam often is referred to as a great engineering achievement. I am an engineer, and I am not slighting my profession when I say that Boulder Dam is an achievement in which free American labor can take equal pride. The man who drafted the blue prints, the foreman who directed the work and the workman who tamped the concrete, together built Boulder Dam. It was a voluntary cooperation, and each was indispensable. Each should share alike in whatever honors are due.

"Boulder Dam, as we see it here in the depths of Black Canyon, with the Colorado River piled up for miles behind it in Lake Mead, is an inspiring and majestic sight. Personally, I take pride in the fact that I had a small part in its construction, and I am sure that all others who labored here must do likewise.

"Almost precisely the same quantity of masonry went into Boulder Dam as was placed in the great pyramid of Cheops in Egypt 3,000 years ago. In appearance, of course, and functionally as well, the two structures are totally dissimilar. The pyramid stands as a monument to a vain king. This dam will serve this and future generations in our democracy in many useful ways. The greatest difference, however, between Boulder Dam and the Great Pyramid is to be found, to my way of thinking, in the manner of their construction.

"The pyramid, we are told, required the labor of more than 100,000 slaves for 30 years, their working lives. About 4,000 free American workmen built Boulder Dam in five years, less 11 days. The advance of science and the machine are not alone responsible for this astounding difference. The skill, the energy and the spirit of the men who toiled willingly at Boulder Dam contributed in large measure.

"The people who are the Government of the United States insist that it shall protect and respect the rights of all its citizens. The manner in which those employed here responded in the construction of Boulder Dam is proof in itself of the wisdom of the democratic form.

"The United States can not impress labor into its service to build tombs or dams. It holds, on the other hand, that every individual is entitled to a free choice of his life work according to his desires and to his abilities. * * *

"The American workman has every right to be proud. His workmanship has no superior. Among the finest of his monuments we see here before us, Boulder Dam.

"The men who built Boulder Dam were gathered from far and near. They made up a good cross-section of the crafts as well. They undertook a hazardous job in an out-of-the-way corner of the desert where the heat was terrific in the middle of the summer and where the winters as well were severe. They did it with enthusiasm.

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"No major construction work of a more hazardous nature than that at Boulder Dam ever has been undertaken. Built in a rock-walled canyon, both narrow and very deep, Boulder Dam subjected the men who worked on it to risks that were many times magnified by its rugged setting. Men were dangled at the ends of ropes a thousand feet above the river, scaling off the loose rock. Here were driven four tremendous tunnels at the very bottom of the gorge, where tropic heat and the magnitude of the operations increased the dangers ordinarily attached to blasting, mucking and lining such bores. The muckers, the pipefitters, the carpenters, the steel erectors, the concrete and clean-up crews worked elbow to elbow in close confinement on the rising piers of the dam while overhead more than 3,000,000 cubic yards of concrete was moving in buckets suspended by steel strands. Truck drivers wound their heavy equipment up construction roads with which, by comparison, the highway to the top of Pikes Peak was a bridle path. Sections of steel pipe, 30 feet in diameter and weighing more than 150 tons, were swung down by cable hauled through narrow apertures in the cliffs to be fitted together in the tunnels within. All these operations, and many more, required a high degree of alert bravery.

"Every precaution was taken to provide safety, but it was unavoidable that there should be casualties. Accidents did occur, and men were injured and some died. It is to the everlasting credit of the men at Boulder Dam that they accepted the challenge of the job itself with gallant courage. They overcame the difficulties it presented and they saw it through to completion, winning the admiration of the constructors of the world with the efficiency and speed of their work.

"In tribute to these men and to their fellows who made the supreme sacrifice that this dam might be built, I dedicate this memorial that it may stand here for all to see against this permanent rock overlooking Boulder Dam; I dedicate it in the name of a grateful Government."

50TH ANNIVERSARY

During 1938 the Robert W. Hunt Company will celebrate its Golden Anniversary, having completed fifty years of service to the construction, railroad and manufacturing industries. Subsequent paragraphs chronicle briefly the history and development of the company, together with some of the important projects with which the company has been identified in a half century of activity:

In 1888, Robert W. Hunt & Co. started operations in a small way with but few employees. The primary purpose of this new company was the inspection of rail steel, but it was later expanded to include other railway materials and equipment. At about the same time, a similar service was inaugurated for the construction industry for the inspection and testing of such materials as cement, structural steel and reinforcing steel

to which was added, at a later date, supervision of the erection of steel and concrete structures.

Captain Robert W. Hunt, who, with his associates, organized the company, was a pioneer in the manufacture of iron and steel and his accomplishments in the twenty-five years during which he was intimately connected with that industry suffice to place him among America's most prominent metallurgists. Historically interesting are the experimental Bessemer Convertors built at Wyandotte, Michigan, in 1865 and the first commercial rolling of steel rails at the Cambria Works in 1867 under his superintendence.

From the inception of the company fifty years ago, its history has been one of constant expansion to keep pace with the desires of its clients. From less than a half-dozen pioneers, it has grown to an international organization of several hundred chemists, metallurgists, engineers, and inspectors, which maintains its own offices, permanent inspection units and laboratories conveniently located in relation to the principal industrial centers of the United States, Canada, England, and Continental Europe. Agents are retained in other parts of the world.

During the World War, every facility of the organization was placed at the disposal of the United States Government for the inspection and testing of war materials and machinery, and in recognition of these services, a special award was received from the Congress of the United States commending the loyalty, energy and efficiency exhibited in the performance of this work.

The practical value of the services furnished by the company to purchasers and users of engineering materials is evidenced by the multitude of engineering projects that exist today, in this and many other countries, bearing the hall-mark of Hunt cooperation. Chicago's Merchandise Mart, the St. Johns Bridge at Portland, Oregon, and the three-mile long Newark-Jersey City Highway structure over the Passaic and Hackensack Rivers may be mentioned; these, however, are but examples and thousands of others could be cited.

WESTINGHOUSE RESEARCH

Dr. Edward R. Weidlein, director of Mellon Institute, Pittsburgh, has announced the establishment of an industrial fellowship by the Westinghouse Electric and Manufacturing Company for the study of problems in the field of dielectrics and electrical insulation. Dr. Robert N. Wenzel, a member of the Mellon Institute research staff since 1927, has been appointed fellow in charge of this project.

The dielectrics fellowship has as its general objective the development of improved insulating materials and processes for application to equipment of Westinghouse manufacture, and it brings the facilities of Mellon Institute into cooperation with those of the Westinghouse Research Laboratories at East Pittsburgh in insulation research.

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URBAN HIGHWAY COMPETITION

Students of engineering and architecture in recognized technical schools of the United States and its possessions, are invited by the American Institute of Steel Construction to participate in a competition to design an urban elevated highway. This competition is held annually for the benefit of students. It usually deals with the design of a bridge, but inasmuch as the Institute is this year offering more substantial prizes for a like competition to attract professionals, a similar problem is this year being offered students as well.

There will be three cash prizes for the best designs submitted, i. e., $150, $100, and $50. The subject of the competition will be a steel elevated highway to carry through express vehicular traffic in a straight line along a marginal avenue. The structure will provide for four lanes of traffic, two in each direction divided by a curb.

A jury of nationally-known authorities will be chosen to select the prize-winning designs. This judgment will be made on April 19, 1938, and drawings entered in the competition must be in the hands of the Institute not later than April 9.

Each pair of lanes in the projected highway shall be twenty-two feet between curbs, and the curb separating the two-directional traffic shall be at least two feet wide. No run-offs, entrances or exits are to be shown. The required underclearance above the surface of the street below is fifteen feet. Suitable lighting is to be provided for the type of traffic carried. The student will assume that ample funds are available with which to build an efficient structure of good appearance, but no money is available for expensive decoration or masonry. The structure must be of steel. Any standard type of floor may be used.

COMPETITION FOR SCULPTORS

A competition for a commission valued at $8,000, open to all sculptors who have completed at least one professional piece of statuary, has been announced by the Metropolitan Life Insurance Company as a means of obtaining an original sculptured group which will form the central unit of that company's exhibit in the Business Administration Building at the New York World's Fair, 1939.

The desired sculpture is to symbolize the average American family, consisting of not less than three persons—mother, father, and child—although any other element complementary to the group as a whole, including additional persons, will be permitted.

As is customary in such competitions, the insurance company has invited certain prominent sculptors to participate, but these men—William Zorach and Mahonri Young, of New York City; Robert Laurent, of Brooklyn; and Maurice Sterne, of San Francisco—will take their chances along with all others who choose to enter, as strict anonymity of all models will be kept until after the final decision by the jury.

The jury which will pass upon the models will be composed of A. Conger Goodyear, president of the Museum of Modern Art, who will serve as chairman; Edward M. M. Warburg, well-known collector and patron of the arts; George Howe, architect; and Frederick H. Ecker, chairman of the board, and Dr. Louis I. Dublin, third vice-president of the Metropolitan Life. They will render a decision as soon as possible after April first of this year, which has been set as the closing date of the competition.

OAKLAND FIRM GETS BIG CONTRACT

Secretary of the Interior Harold L. Ickes has announced approval of the award of contract for completion of Grand Coulee Dam, among the biggest of Government jobs, to a combination of contractors who bid under the name of Interior Construction Company of Oakland, on a tender of $34,442,240.

Bids for this work, which involves placement of about 5,250,000 cubic yards of concrete in the world's most massive masonry structure, were opened by the Bureau of Reclamation December 10, 1937, at Spokane, Washington. Two tenders were received, that of the Interior Construction Company, which is a combination of 10 large contractors, and a second of $42,185,802.50 from the Pacific Constructors, Inc., of Los Angeles, a combination of eight contractors.

FIRST PRIZE REPEATER

First prize in a nation-wide small house competition for the West has again been awarded to the Pabco-built William H. Lowe home at Woodside, California, for which Gardner A. Dailey, San Francisco, was the architect.

An unusual feature of the home is the use of Pabco linoleum flooring in every room, and the use of a Permanite roof—an entirely new product.

The points on which the selection was made follow: 1. Excellence of design; 2. Economy in space and convenience of plan; 3. Adaptation of the house to lot; its orientation; 4. Skill in the use of materials.

Last year's first prize in the national group for homes of five rooms and less, also went to the Pabco-built W. L. Lowe home at Woodside.

CERTIFICATES TO PRACTICE

California State Board of Architectural Examiners, Southern Division, January 25 issued provisional certificates to the following persons to practice architecture in California: Roy Walling Cheesman, 206 Canyon Dr., Santa Barbara; Francis Joseph Heusel, 1529 E. Third St., Long Beach; Norman N. Kandl, 1016-A Seventh St., Santa Monica; Walter B. Phillips, 331 N. Lucerne Blvd., Los Angeles.

HOTEL ALTERATIONS

Conrad T. Kett is the architect and L. H. Nishkian the structural engineer for extensive alterations to the Hotel Sutter, San Francisco.

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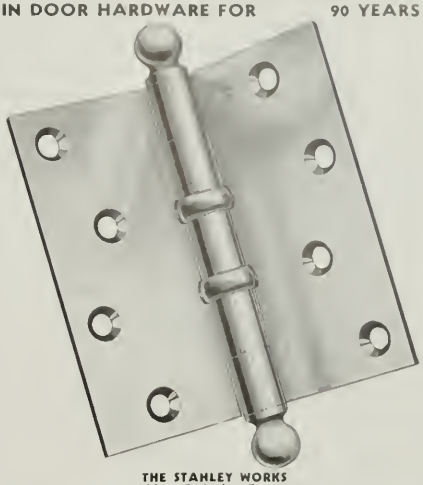

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COMPETITIONS FOR FELLOWSHIPS

The American Academy in Rome has announced its annual competitions for fellowships in architecture, landscape architecture, painting, sculpture, musical composition and classical studies.

In architecture the Wm. Rutherford Mead fellowship is to be awarded, in painting the Lazarus fellowship provided by the Metropolitan Museum of Art, through the Jacob H. Lazarus Fund, in landscape architecture the Garden Club of America fellowship, in musical composition the Walter Damrasch fellowship and in classical studies the Jesse Benedict Carter Memorial fellowship.

The competitions are open to unmarried men (in classical studies to men and women) not over 30 years of age who are citizens of the United States. The stipend of each fellowship is $1,250 a year with an allowance of $300 for transportation to and from Rome and $200 to $300 to fellows in the fine arts for materials and incidental expenses. Residence and studio are provided without charge at the Academy, and the total estimated value of each fellowship is about $2,000 a year.

CHILDREN AS APARTMENT TENANTS

Otis R. Marston, apartment house owner of Berkeley, California, reversed the usual order when he advertised for tenants with children.

A sign hanging before a brand new apartment house building there said: "For Rent, Children Preferred."

Marston, a property owner for more than twenty years, revealed that he had finally convinced himself that it is more profitable to rent an apartment, flat or home to a family with children.

"It has taken me a long time to realize that children aren't half so destructive as adults, but now I know it's true," he said.

"In my experience, all the children have ever done was to scuff a little paint or plaster off the wall. Adults have cost me a small fortune in one item alone, and that's replacing sink boards they ruined by jabs with ice-picks."

GEORGE S. MacGRUER

George Smith MacGruer, for many years identified with the plastering industry in San Francisco and Los Angeles, passed away at the French Hospital, San Francisco, December 14th, following a comparatively short illness. For many years he conducted a contracting business under the firm name of MacGruer & Simpson. His father followed the same vocation as the son, the latter serving his apprenticeship under the elder MacGruer in Dundee, Scotland. Many of the most prominent public and private buildings in California stand as monuments to his ability as a contractor. These include the Bank of America in San Francisco, the Biltmore Hotel in Los Angeles, the Orpheum Theater and the Hotel Breakers in Palm Beach, Florida. Mr. MacGruer was 56.

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10% CONSTRUCTION GAIN

The fourth year of construction industry recovery closed in the middle of a moderate recession, but with a definite gain over the preceding year, according to Thomas S. Holden, vice-president in charge of Statistics & Research of F. W. Dodge Corporation. Recovery gains over 1936 were approximately as follows: An increase of 15% in dollar volume of residential building; a dollar increase of 21% in non-residential building; an increase of 40% in public utilities construction; and a decrease of 20% in public works construction.

From the point of view of ownership and financing, the program of the year 1937 showed a 34% increase over 1936 in dollar volume of private building and engineering work, partially offset by a 15% decline in public work of all kinds, resulting in a general construction volume increase of about 10%. The final 1937 total for construction contracts awarded in the 37 Eastern States will be $2,900,000,000 or a little over, compared with $2,675,000,000 in 1936. Each month of 1937 through August gained over the corresponding month of 1936. Declines after August were very moderate: September contracts dropped 12% below the preceding September; October contracts were 11% under the preceding October; November contracts were 5% under November, 1936.

The recession in construction has not, up to the present time, shown any indications of a depression of a major character. It has brought, however, a realization of the fact that rosy expectations of a rapidly rising speculation boom in the real estate and residential building had no foundation, and of the equally pertinent fact that the great potential market for residential building is in low-priced housing. The home-building industry, to realize fully its potential market, must gradually and progressively solve its major problem of cutting the cost of the finished product.

While pending housing legislation promises further progress in reducing the cost of financing new housing, the construction industry looks more hope-

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fully to those economic and political factors that will stimulate general business confidence to produce an early revival of the interrupted recovery. Resumption of expansion programs of electric utilities and industrial corporations would not only produce construction of those specialized classes, but also spread purchasing power for new homes.

The duration of the current minor recession is problematical, and the new year promises to be one of stabilization of recovery rather than one of large volume increases. Chances are good for a quite moderate increase in residential building during the next twelve months, probably accompanied by moderate declines in non-residential building and public works; advancement of the expansion program of the utilities is an open question at the moment. As the year opens the prospect seems to be for a total 1938 construction equal to a slightly less total than that of the year 1937.

1938 METAL CONGRESS

Based on the theme, "Metals In Industry," the Western Metal Congress and Exposition, March 21 to 25 in the Pan-Pacific auditorium and the Biltmore Hotel, Los Angeles, is expected to attract 3,000 executives, plant operators, metallurgists and superintendents to the Congress.

The Exposition, held in Los Angeles eight years ago, was attended by 60,000, but William H. Eiseman, secretary of the American Society of Metals, said an earnest effort will be made to eliminate the curiosity seeker and to attract only 25,000 interested men, who are definitely connected with the fabrication of industrial metals.

Eighteen national technical societies are cooperating in the double event. These are:

American Chemical Society, American Foundrymen's Association, American Institute of Aeronautical Engineers, American Institute of Electrical Engineers, American Institute of Mining and Metallurgical Engineers (Institute of Metals), American Petro-

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The American Welding Society, American Society of Mechanical Engineers and the Pacific Coast Gas Association will meet independently in their own sessions during week of the Congress and Exposition.

Particular attention will be paid by the Congress to metals used in the petroleum, aviation, general manufacturing, chemical and mining industries. Speakers from all parts of this country will participate in the educational program.

A series of five educational and informative lectures on the manufacture, treatment and application of iron and steel will be presented by Dr. A. Allan Bates, distinguished lecturer, teacher and researcher, who formerly was professor of metallurgy, Case School of Applied Science. Dr. Bates now is manager of the chemistry and metallurgical department of Westinghouse Electric and Manufacturing Company, Pittsburg.

BOULDER DAM REVENUES

Boulder Dam, which according to the original plans and estimates, was not to have been completed until next year, returned more than $2,000,000 to the United States Treasury by the end of 1937, John C. Page, Commissioner of Reclamation, reported recently to Secretary of the Interior Harold L. Ickes.

Sale of power by the end of the calendar year amounted to more than $1,110,000, despite the fact that only one-quarter of the generating machinery has been installed and the fact that the Boulder Dam power plant was not in a position to guarantee continuous service and therefore the firm power rate could not be levied

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until June 1, 1937. In addition to power revenues, $906,000 was collected during the year in payments for generating machinery by the purchasers of power. Title to this equipment remains, however, in the United States.

During 1938 it is estimated that revenues from power of Boulder Dam will increase to $2,500,000 and payments for machinery will amount to $1,000,000.

The Boulder Dam power plant is generating between 130,000,000 and 150,000,000 kilowatt hours of electric energy a month at present. Those buying this energy at this time are the cities of Los Angeles, Pasadena, Glendale, and Burbank in Southern California; the Nevada - California Electric Corporation; and the Lincoln County Power District and the Southern Nevada Power Company, the latter two obtaining power allocated to the State of Nevada.

"The demand for power from Boulder Dam is increasing at a remarkable rate," Mr. Page reported to Secretary Ickes, "and this demand arises not only from those who originally contracted for Boulder Dam power but also from other agencies as well."

With the exception of the Metropolitan Water District of Southern California, all the power purchasers have been anxious to advance the time at which they may begin to take energy. The Water District planned to use its power in pumping water through the Colorado River aqueduct which it is building. Because Boulder Dam was completed ahead of schedule by almost two years, and the aqueduct is not as yet completed, the Water District has indicated that it will not be able to use the power allocated to it when the effective date of its contract arrives during 1938. Other purchasers have options on this power if it is not taken by the district.

Boulder Dam, itself, cost approximately $96,000,000. Power machinery and the power house and an item of $15,500,000 for interest during the construction has brought the Government's total investment in the project to date to $123,000,000.

Present power contracts will return the entire investment, with interest at

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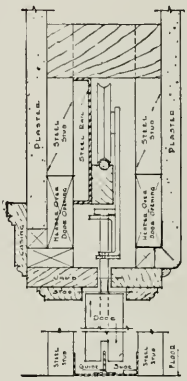

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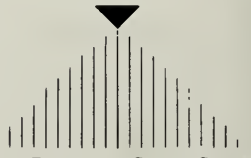

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The Bureau of Reclamation has on order two additional generators, and two are now being installed and will be ready for service during this year. These generators will be of 82,500 kilovolt-ampere capacity, identical in size with the four great generators now in operation. In addition to the four large generators, one smaller one, of 40,000 kilovolt-ampere capacity also is operating. An idea of the size of the large generators may be obtained from the fact that the small one is about as big as any in operation elsewhere in the world.

NOTES AND COMMENTS

[Concluded from page 2]

It is a matter of common knowledge that the Federal Government is now working on a plan to organize a department headed by a new Cabinet member whose duties will be to coordinate all constructive projects to be carried out by the various arms of the Government. Should this plan succeed, the Government would, no doubt, design and supervise all governmental work, thereby preventing private architects from ever designing or participating in the construction of public buildings.

Every building done by the State or Federal Government deprives a private architect of the opportunity to earn a living, to give employment to architectural workers outside of the Government service, and to pay rent and other overhead expenses which are tax-producing. At the same time, an expanded Civil Service necessarily places a non-taxpaying additional burden on that same architect, who is debarred from paying taxes because of decreased income.

Government departments cannot produce plans more cheaply than private practitioners. On the contrary, the private architect can and does produce a given building in less time and at a lower cost than the Government organization. The sooner Federal and State Governments get out of the architectural profession as designers, so much sooner will the burden on the taxpayer be lightened and the architect recover his right to make a living unrestricted by political set-ups.

THE War Department has set $4,000,000 for repairs and new buildings for the rehabilitation of the Presidio while local groups requested $7,516,000. The San Francisco Junior Chamber of Commerce is heading a movement for the complete rehabilitation of the Presidio.

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ARCHITECT'S VIEW

H. I. Feldman, a New York architect, is quoted in a recent news release as saying:

"Successful building management can be divided into two parts—the physical structure as created by architect and builder, which the manager cannot improve much, and its operation, which is entirely in the manager's control. Buildings of investment character should stand for lasting, efficient use, at minimum upkeep. This makes highly speculative projects always questionable. To keep out the elements is the builder's everlasting problem. Permanent soundness is imperative. Steam heating should be installed for efficiency rather than low initial cost. Plumbing must be planned carefully to avoid expensive upkeep. Good paint is always cheapest and best. Electrical equipment must be in expert hands. Location, building plan and financing must be adequate. The tenant must be pleased. This is vital in good management. Poor management is too ignorant to understand the value of good-will. It is best business to keep the old customer."

MISPRONOUNCED WORDS

The Office of Education, Washington, D. C., helped compile a list of twelve words most frequently mispronounced. They are not great jawbreakers or scientific terms but little words which are used every day by everybody. This list is arranged in the order of frequency of use and the two-letter word "on" heads the dozen.

1. On.
2. Again.
3. Toward.
4. Interesting.
5. Accept.
6. Address.
7. Preferable.
8. Drowned.
9. Perform.
10. Automobile.
11. Attacked.
12. Forehead.

For correct pronunciation see your dictionary.

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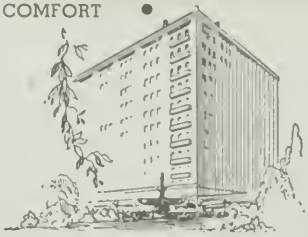

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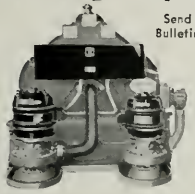

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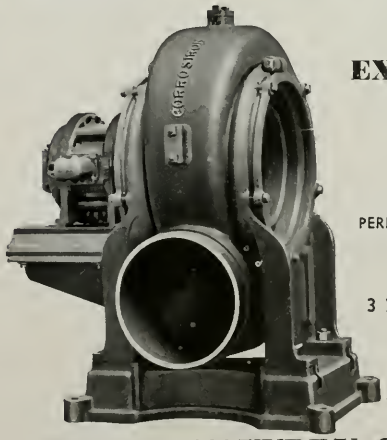

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Notes and Comments

The new Federal Housing Bill has been in operation several weeks and the Administration feels it has successfully launched a three billion dollar home building boom that is going to swing the country back to normalcy. While we have yet to see any material improvement in building activity, the fact that we are in the midst of our off season (mid-winter), must not be overlooked. Twenty or more days of rain were anything but a stimulant to the building-minded. However, there is a more optimistic atmosphere now and a turn for the better is undoubtedly close at hand. Success of the Housing Bill depends largely upon the wholehearted, voluntary cooperation of private capital and industry, by which is meant the lending institutions, the material and equipment manufacturers and distributors, the builders, promoters and labor.

It is plainly obvious that before this housing movement can get well under way there must be unison of action. To put this program over successfully there must be (1) a willing buyer (2) a willing lender (3) willing labor and (4) a willing builder.

At this writing Nos. 2 and 4 are ready; are 'rarin to go, to use an apt expression. Our banks have signified their eagerness to lend and the contractors are all for getting started. But the prospective buyer (the future home owner; in most cases the salaried man) is a bit leary—he's trying to convince himself his job is permanent, that he won't get a cut or be let out altogether after he has committed himself to a 20 or 30 year monthly payment obligation. He wants assurance, (and who can blame him?) that business is not headed for another dive that may mean loss of income, in part or completely.

Then there is labor—what is to be its attitude? If there are to be more demands for higher wages with less working hours, sit-down strikes, boycotts, intimidation and what not, then this new Housing Movement will get nowhere. Experts are frank to admit that labor is a very important cog in the wheel and must be reckoned with. But labor would do well to watch its step lest it kill the goose that lays the golden egg.

* * *

WITH the inauguration of the Government low-cost housing program under the Wagner-Steagall Act, the United States of America for the first time will take its place among those nations of the world which have resolved, as a measure of national self-respect, to end the slums. This is not a temporary program. It is not an emergency program. It is not even an unemployment relief program—although it will be a great stimulus to employment. The Wagner-Steagall Act constitutes the charter of a rehousing program. Under it, we will be able to provide, I hope, decent homes for at least 100,000 families of minimum income. If we can do even that in the next three years, we will have taken one step—and not a small one—toward making America a better place to live tomorrow.

—NATHAN STRAUS, Adm.
U. S. Housing Authority.

* * *

The A. I. A. Convention will be held in New Orleans, Louisiana, on Tuesday, Wednesday, Thursday and Friday, April 19, 20, 21 and 22. Hotel headquarters will be at The Roosevelt.

Adds charm and Beauty to Exteriors

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With the passage of important amendments to the Federal Housing Act, construction circles are hopeful that the slump in residential construction may have reached its peak.

The new legislation provides for 90 per cent insured mortgages on newly constructed small homes costing $6,000 and less, and for between 80 and 90 per cent insured mortgages on newly constructed homes costing between $6,000 and $10,000.

The mortgage money must come, as heretofore, from private lending institutions. The government insures mortgages, but does not itself lend the money.

The construction of residences and the improvement of housing conditions, while of national interest, are inherently a localized activity and problem and should be so recognized.

Any action of central government to obtain results must enlist the initiative and place responsibility squarely upon community agencies. Without such local interest and action little progress may be expected.

There is reason to believe that responsible local organizations will give attention in their various communities to the problem of removing handicaps to building activity and of stimulating residential building along constructive lines. — Washington Review U. S. Chamber of Commerce.

* * *

The vast and far-flung resources of the construction industry, with its billions of dollars of invested wealth, have been placed squarely behind the forces of Government in a nationwide drive to build hundreds of thousands of low-cost homes to sell at not more than $5,000 each. This is the goal of the National Small Homes Demonstration, the name given to this industry alliance under which over thirty-five leading groups in the building material, home equipment, and home furnishing field are mobilizing their efforts to produce the ultimate in economy, efficiency and attractiveness of low-cost house design.

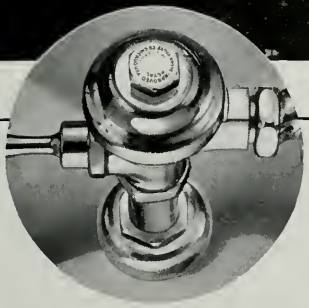
In a movement of mass proportions this group will build in every important community in the United States this spring and summer thousands of demonstration low-cost houses ranging in construction costs from $1500 to $4000, none to sell anywhere over $5000. For the first time in the history of the construction industry, the home equipment group—plumbing, heating, electrification—the home furnishing manufacturers, and all building material industries are centering and coordinating their efforts to provide "more house for the dollar"—homes in a variety of designs which may be bought by anyone earning a reasonably dependable income as low as $1,000 a year.

The program, now underway, will have the active cooperation of the Federal Housing

[Please turn to Page 10]

..FOURTEEN MILLION GALLONS

SAVED EVERY DAY BY SLOAN VALVES



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• There are more than 3½ million Sloan Flush Valves in daily use. Over other systems using tanks, they save an average of 2 gallons of water every operation. If Sloan Valves were tripped *only twice each day* —they would save 14,000,000 gallons of water. (And the majority of Sloan Valves are used much oftener than twice a day.)

Not only do Sloan Valves save water—they cut maintenance costs too. We have certified records (sent on request) which show maintenance costs to range from ¼c to 1½c per valve—per year. In Sloan Flush Valves you gain true economy—especially since their first cost is no higher.

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PULSE OF THE READER

"JERRY-BUILT" HOUSES

Dear Editor:

It is my belief that "Jerry-built" houses are an important factor in delaying the much-needed building boom, particularly in small private homes.

All companies allied with the construction industry should do everything possible to prevent building and equipping houses in a cheap manner.

Among the chief sources of the dissatisfaction is poor insulation. Proper insulating material should have a mineral surface to prevent corrosion and tarnishing with waterproof membranes over both surfaces and an asphalt core through the center. The kind of material used and the installation in the walls and roof of a house for proper ventilation is important.

Builders and supply men are urged to give the public only the very best in materials and construction to assure satisfaction for all present home-owners and to encourage other persons to build, especially in the medium cost field where the housing shortage is most acute.

Without public confidence, we in the building industry can do very little in the building of private homes. Satisfaction of owners through good materials and construction must be achieved and dissatisfaction stopped at all cost.

C. E. STEDMAN.

Chicago, Feb. 21, 1938.

COST OF PLUMBING

Dear Editor:

The Northern California Plumbing and Heating Wholesalers Association, Inc., recently concluded a survey of current plumbing prices in relation to prices of the past 20 years. The survey shows today's plumbing and heating prices lower by 20 per cent than in 1926—and 10 per cent lower than the average of 20 years.

In fact prices of plumbing and heating materials are the lowest of the building materials group—compared with the 1926 prices—(1926—100) as shown by the following table:

October —	1937	1935	1933	1931
Structural Steel	114.9	92.0	86.8	81.7
Other building materials	100.2	90.5	87.1	82.0
Lumber	97.3	82.0	84.2	65.2
Cement	95.5	95.5	91.2	75.1
Brick & Tile	93.4	88.3	84.6	82.6
Paint & Paint materials	84.2	81.9	76.1	77.0
Plumbing & Heating	80.6	71.1	74.7	81.6

The homeowner buying plumbing and heating today gets 24.1 per cent more for his dollar than in 1926. When he buys paint and paint materials—18.8 per cent more; brick and tile—0.71; cement—0.47; lumber—0.28 per cent.

Taking some of the items separately we find that:

A 5½ ft. Recess Bath Tub	costs 27.5	less today than in 1926.				
A 5½ ft. Tub on Legs	" 26.3	"	"	"	"	"
A w/d Closet (tank, bowl, seat)	" 13.6	"	"	"	"	"
A Pedestal Lavatory—20x24	" 23.0	"	"	"	"	"
A Wall Hung Lavatory—18x24	" 25.0	"	"	"	"	"
A Sink 20x30—Enamel Iron	" 10.0	"	"	"	"	"

The realization that plumbing prices are so attractive today should stimulate building not a little.

J. E. HEASLETT, Secretary-Manager.
Northern California Plumbing & Heating Wholesalers Ass'n.

San Francisco,
January 31, 1938.

NOTES AND COMMENTS

[Continued from Page 2]

Administration, and all houses constructed will be eligible for financing under the FHA system of insured mortgages.

Last year, the National Small Homes Demonstration, then largely the single-handed activity of the lumber industry, built 3108 of these demonstration houses in 1204 communities to sell as low as $1150 in some localities, but in no instance more than $5,000. Three typical designs—the work of the Federal Housing Administration—were used in this national demonstration to show that well constructed homes could be built anywhere in the United States at less than $5000 each.

The movement goes forward with the active participation of many thousands of lumber retailers, builders and contractors who will sponsor the construction and showing of similar demonstration homes in their communities. The program now is being presented at conventions throughout the country to over 20,000 lumber retailers, who again will act as the spearhead in this movement. Officials of the Small Homes Demonstration predict that the building of hundreds of thousands of small homes will follow in the wake of these local demonstrations.

In stepping-stone formation the range of designs for these houses begins with a minimum one-story, basementless small house, with an extra large living room, one bedroom, kitchen and bath at a construction cost well under $2,000, and goes on up to a six-room house with garage, costing between $2800 and $3400. All designs are approved by the Federal Housing Administration, and if situated on a suitable building site, will be eligible for FHA financing.

* * *

THE bearings of this immense building program on the attractiveness of the American scene are of profound concern if its full beneficence is to be realized. Is it to be rendered in terms of architectural attractiveness or will it make for unnumbered square miles of illiterate ugliness? If it is to be left to the exploitation of purely commercial interests the effect can hardly fail to be disastrous to the civic pride of the country.

The architectural profession of America, conscious of its obvious responsibility for the success of this great construction policy, has pledged the Government its earnest collaboration. It is to be hoped that in a spirit of enlightened patriotism all interests which can assist will not fail it.

—CHAS. D. MAGINNIS, President A.I.A.

* * *

Commenting on the model of the interior of the Oregon State Capitol used as a means of study by Barry Faulkner and Frank Swartz for their work on the murals, Henry Saylor in the former American Architect (now consolidated with The Record) says:

"The central part of the Capitol is going to surprise a lot of people—a cylindrical lantern form set directly upon a square base without the use of any pendentives. The form is certainly not put to use for the first time, since it appears frequently in the Alhambra, and has been used as recently as in Rockefeller Center. I rather think it will be liked as a perfectly frank solution of a problem without recourse to traditional devices inherent in other forms of construction. The framing here, of course, is built upon an octagonal steel base, four sides of which coincide with the four walls of the lobby."

* * *

"Fire occurred in one out of every 75 school buildings in the United States during the past year," says Dr. David J. Price, Chief of the Chemical Engineering Division of the Bureau of Chemistry and Soils, U. S. Department of Agriculture. The explosion in the New London, Texas, schoolhouse on March 18 last, in which 293 lives were lost, together with the more than 3,000 fires in school buildings in the United States in 1937, emphasizes the need for fire-protective measures in rural schools, Doctor Price says, pointing out that 200,000 of the 250,000 school buildings in the United States—or approximately 4 out of every 5—are rural schools.

Doctor Price, who is in charge of the research work on dust explosion and fire prevention in the U. S. Department of Agriculture and chairman of the National Fire Protection Association Committee on Dust Explosion Hazards and Farm Fire Protection, was asked to direct the investigation of the

[Please turn to Page 74]

FOR TODAY'S BUILDINGS...

THERE IS NO MORE *Pleasing Flooring* THAN NORTHERN HARD MAPLE

Today, you can use Northern Hard Maple Flooring in any of three ways. Each brings you the friendly warmth of wood, plus the permanence of Hard Maple — in a flooring of genuine beauty.

Hard Maple offers you the natural beauty of one of Nature's tightest-grained woods — the light-reflecting smoothness which makes Hard Maple the "floor of sunshine". . . cheery as a June day. It *looks* clean . . . it *is* clean. Nature's pattern never tires the eye . . . Maple stays liveable.

Where special architectural effects are desired, Hard Maple also supplies the answer. It is available "grouped for color tone." In strips or blocks, you can choose selected tones of the *natural* wood (selected for "White Clear" or "Brown Clear") and use Hard Maple in a variety of pleasing patterns.

Third, Hard Maple also offers choice of any color scheme — through proven color finishes (transparent or opaque), inexpensive to apply, simple to maintain. These come in Early American, Spanish Brown, Seal Black, Royal Blue, Autumn Brown, and other colors, imparting a glorious richness to Maple's natural beauty which cannot be described. For *any* color on this smooth, tight surface is more beautiful than on other flooring material. Colored samples are available on request.

Whichever of these three ways you use Hard Maple Flooring, it offers enduring beauty. And the permanence, lower maintenance and cleaning costs, the satisfaction that have made this flooring a favorite in buildings of all types, are yours in *all three.* Insist upon trademarked **MFMA*** Maple when you build or remodel.

Color refinished Northern Hard Maple Floor—over 10 years old

To be sure of Association guaranteed grading, specify and look for the* **MFMA *trademark (indented and stamped). The following manufacturers are licensed to use it:*

- Beck, August C. Co., Milwaukee, Wis.
- Brown Dimension Co., Manistique, Mich.
- Bruce, E. L. Company, Memphis, Tenn. (Mill at Reed City, Mich.)
- Connor Lumber & Land Co., Laona, Wis. (Sales Office, Marshfield, Wis.)
- Farrin Lumber Co., M. B., Cincinnati, O.
- Holt Hardwood Co., Oconto, Wis.
- Kerry & Hanson Flooring Co., Grayling, Mich.
- Kneeland-Bigelow Co., Bay City, Mich.
- Kneeland-McLurg Flooring Co., Phillips, Wis.
- North Branch Flooring Co., Chicago, Ill.
- Oval Wood Dish Corp., Tupper Lake, N. Y.
- Robbins Flooring Co., Rhinelander, Wis.
- Stephenson Company, I., Wells, Mich.
- Wells, J.W. Lumber Co., Menominee, Mich.
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Floor with **MFMA Maple**

NORTHERN HARD

MAPLE FLOORING MANUFACTURERS ASSOCIATION

1790 McCormick Building, Chicago, Illinois

See our catalog data in Sweet's, Sec. 11/76.

RESIDENCE HALL FOR WOMEN, THE STATE COLLEGE OF WASHINGTON, PULLMAN, WASHINGTON
STANLEY A. SMITH, ARCHITECT
JOHN W. MALONEY, CONSULTING ARCHITECT

This recently constructed building accommodates 225 women students in two separate dormitory units, with every provision for the comfort of its occupants. The dining room service is from a common kitchen between the two dormitory units. The architectural expression of the exterior forms an appropriate and pleasing addition to the college building group.

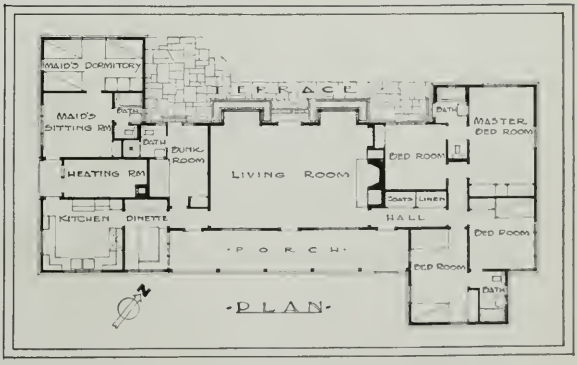
SUMMER RESIDENCE OF JOHN P. WEYERHAEUSER, AMERICAN LAKE, WASHINGTON
LEA, PEARSON AND RICHARDS, ARCHITECTS

This house is designed to take advantage of the fine view of the lake to the northwest. While planned for summer occupancy, it is completely equipped for use also in winter. Plywood is used for the interior finish, worked out to provide a fine base for brush stipple semi gloss enamel finish.

ARCHITECTURAL TRENDS IN THE STATE OF WASHINGTON

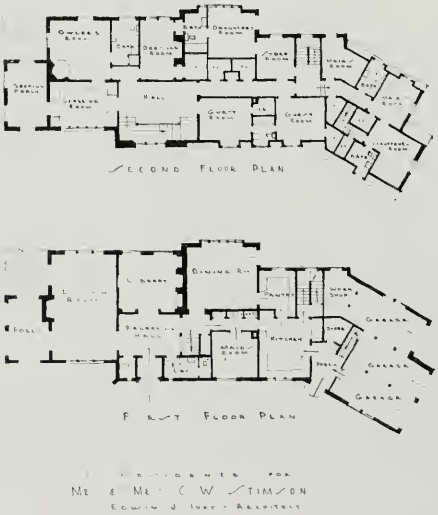
By Chas. H. Alden, F.A.I.A., Guest Editor

TO FORM a worthwhile idea of the situation and trends in a locality with regard to any line of endeavor, it appears necessary to consider not only present basic conditions affecting the endeavor but to look back into the past to some extent to see what factors influenced the development. While it is true that we have fashions and fads in architecture, as in various other lines of human effort, these have proved to be temporary only and we must look deeper if we are to expect any degree of permanency. Irrespective of the individualities of the owner



RESIDENCE OF C. W. STIMSON, THE HIGHLANDS
EDWIN J. IVEY, ARCHITECT

This view from the entrance approach gives a fine example of the architecture in this notable residential development just north of Seattle. Here the landscape planning of an extensive tract of land, varied in topography, provides a magnificent view of Puget Sound and the Olympic Mountains. Exterior walls of the house are red brick with the fine detail in the trim executed in cast stone.



and architect which affect architectural design, the geographic and climatic conditions of a locality, and historic precedent, if any exists, appear to give sound basis for consideration.

When the locality we are considering is a State, it should be recognized that a State is a political division and may have different geographic and climatic conditions in different portions and the conditions in one portion may be similar to conditions in contiguous States rather than those common to the one State as a whole. This is particularly true of the State of Washington which, with Oregon and Idaho, have a local designation as the Pacific Northwest, and this Pacific Northwest is divided by a high mountain range running north and south through Washington and Oregon with marked geographic and climatic differences between the areas east and west of these mountains. "West of the Mountains" in Washington, in-

RESIDENCE OF ARTHUR L. LOVELESS, SEATTLE
ARTHUR L. LOVELESS, ARCHITECT

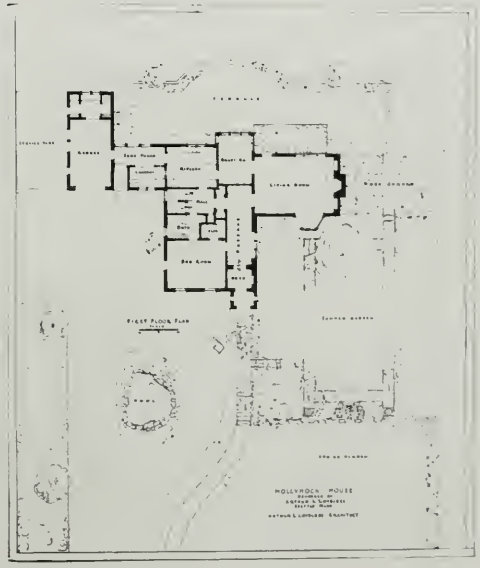
This house, built by an architect for his own home, takes full advantage of the fine site in the city of Seattle overlooking Lake Washington and distant mountains. The gardens, appropriate to the climatic conditions of the Puget Sound country, are made particularly attractive by the skillful and sympathetic attention given them by architect and owner.

cluding a considerable portion familiarly known as the "Puget Sound Country," has a mountainous and hilly topography with mild and equable climatic conditions. "East of the Mountains" there is a climate more similar to the country to the east without the extreme cold or heat conditions existing in some portions of the middle west.

NO HISTORIC PRECEDENT FOR STYLE

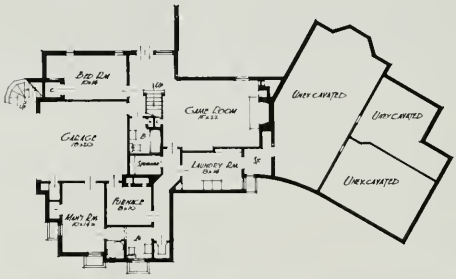
While there are these differences in the political division designated as the State of Washington which affect architecture, all portions of the State and of the Pacific Northwest, differ materially from California to the south in having no local historic precedent to affect their architectural development.

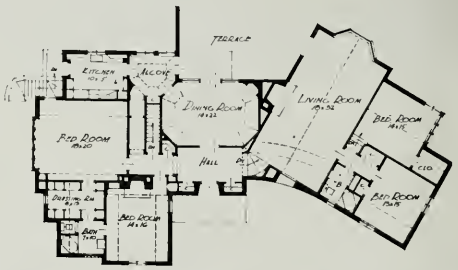
The early settlers of California gave that country the "Mission" type of architecture they adapted from the Spanish renaissance then prevalent in their mother country and so



RESIDENCE OF J. J. ECTOR, YAKIMA
WILLIAM J. BAIN, ARCHITECT

This residence on a hilly site in the city of Yakima in the central part of Washington, "East of the Mountains," is effectively planned to meet the irregular topographical conditions and take full advantage of the commanding view to the south. The brick walls are painted white. The roof is red tile.





RESIDENCE OF KIRK THOMPSON, SPOKANE
G. ALBIN PEHRSON, ARCHITECT

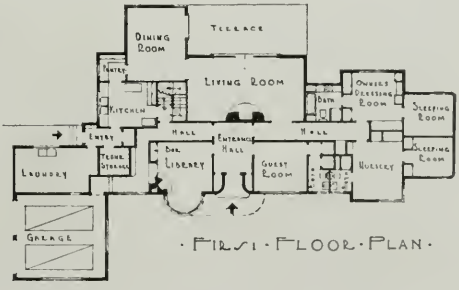
This house is a particularly appropriate and well studied expression of the modern feeling in design. Interesting features in the plan are the entire separation of the living room and dining room from the entrance hall and arrangement of living quarters with room for sleeping only, with sitting room and dressing room adjoining. Maid's living quarters are in a second story. The exterior design, with its long and horizontal lines, is particularly adapted to the level character of the site and in harmony with the design of an adjoining house by the same architect. The exterior walls are of reinforced concrete with exterior effect obtained by the plywood lining of the forms and painting directly on the concrete. The interior has an appropriate modern character.

well adapted to the natural conditions of California as to materially affect the subsequent architectural development of the new region. This was a similar occurrence in architectural history to the implanting of the Colonial on the Atlantic Coast, an architectural style derived from the English renaissance which then prevailed in the home country of these colonists. This "Colonial" had a wide influence, not only in the subsequent architecture of the Atlantic Coast region but throughout the country to the west.

The State of Washington, with other States in the Pacific Northwest, had no such local architectural precedent to guide their future architectural development. Vancouver's discovery of Puget Sound in 1792 was not followed by colonists from overseas who could introduce an architectural style from their country, and the later explorers and adventurers in the fur trade who were the early pioneer settlers of the northwest, left nothing more than crude stockades and blockhouses for defense against the Indians. These pioneer structures are historically interesting and picturesque but they could do nothing towards establishing an architectural style.

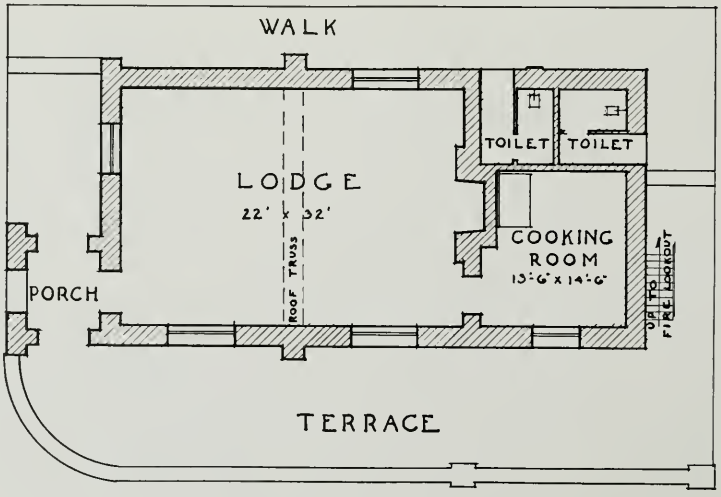
FACTORS INFLUENCING STYLE

In the absence of local architectural precedent, other factors must be depended upon



VISTA HOUSE, MT. SPOKANE STATE PARK
HENRY C. BERTELSEN, ARCHITECT

This attractive building is on the summit of Mt. Spokane in the State Park, 37 miles from the city of Spokane, forming a focal point for the Park and providing a fire lookout and shelter. It is open to the public for cooking and shelter. The walls are of stone from the immediate vicinity, carefully selected to show weathered surfaces on the exterior. The interior reveals broken stone surfaces on the walls and rough sawed timbers in the roof construction.



WAYSIDE RESTAURANT, SEATTLE
VAS S. STIMSON, ARCHITECT

This little building is of a class that generally fails to get architectural attention. As designed by the architect, it not only is economical in construction and thoroughly provided with everything necessary to make the restaurant service efficient and attractive but is an impressive feature of the wayside. The glass brick each side of the entrance doorway, illuminated with color effects, adds to the atractiveness. Emphasis given to the "W" is indicative of the enterprising owner and proprietor, Ray Whiting.

to give the State of Washington an appropriate stylistic expression in its architecture. The mild equable climate of the Puget Sound region, mild winters and cool summers with sunshine as well as rain, but not the intensive sunshine of "sunny" California is somewhat similar to portions of England where the Colonial architecture of the United States had its origin, and we find modified Colonial particularly appropriate and intelligently used in the architecture of western Washington. Also in eastern Washington, where the climate is more similar to the eastern sections of the country, we find the Colonial giving an architectural inspiration as it did to so great an extent in the more eastern portions of the United States.

Besides geographic conditions and historic precedent, the building material indigeneous to the locality had an influence particularly in the pioneer days. The great timber resources of the Pacific Northwest made wood the prevalent building material in the earliest stages of the State's development. Later, raw materials for the manufacture of cement and the "clay products," brick and terra cotta, were discovered and utilized; the manufacture of these widely used building products becoming important industries in the State of Washington. Deposits of stone suitable for various building purposes were also discovered and made available for use, particularly in the larger buildings, and while wood remained a natural construction material in this timber country, architecture finds material suitable for its expression in these other building products.

Without the stimulus of local precedent, the State of Washington, after passing through stages of poor or worse architecture as did

COMMUNITY CENTER, LAKEWOOD
SILAS E. NELSON, ARCHITECT

This building is a short distance south of the city of Tacoma on a well travelled thoroughfare at junction of road to nearby lakes, where the Lakewood community is situated. In addition to the theater the building contains a ball room, community hall, restaurant, market, medical and dental offices, barber shop and beauty parlors. To provide for additional space in the future, the shorter wing can be extended to make the building symmetrical, with the theater as the central feature.

other sections of the country, emerged into an architectural development more thoroughly worth while and this became particularly notable in the residential field. The north Pacific coast did not have the intensified booms in building construction that took place at the south, causing the trained architect to concentrate on the more profitable larger work and leave the small residences and other minor structures to the untrained designer and builder. Architects worthy of the name could always be found in the north Pacific coast region to give attention to the smaller structures, and the small house, when the prospective home owner was sufficiently enlightened to appreciate the services of the architect, was designed with worthy architectural expression to take advantage of the variegated hilly locations, scenic advantages and other conditions suitable to the localities, to get for the small house problem the most successful solution.

Prior to the advent of "modernism," a popular type of architectural expression in the smaller residence work was "modified Colonial," and the variety and extent exercised in the "modifying" appeared to give abundant lee-way to meet conditions and express the temperament of the designer. Gardens were given particular attention as important features of the homes, particularly in the Puget Sound region where climatic conditions conserve garden growth throughout the year.

THE MODERN TREND FINDS FAVOR

In larger work there were, of course, forms of classic tradition other than Colonial which were applicable, and these were used with an originality that secured for this new country, buildings of a distinguished architectural character, until modernism obtained a foothold, and afterwards among the conservatively inclined. The traditional gothic for church work had its influ-

CHEMISTRY AND PHARMACY BUILDING, UNIVERSITY OF WASHINGTON
F. A. NARAMORE AND GRAINGER & THOMAS, ASSOCIATE ARCHITECTS,
BEBB & GOULD, SUPERVISING ARCHITECTS

This new building for the Department of Chemistry and College of Pharmacy of the University of Washington has its main portion now complete and in use. The building occupies a prominent position in the general plan for the development of the University and when completed will cover approximately one acre of ground and provide the most up-to-date equipment for instruction in the various branches of chemistry and pharmacy, including chemical engineering. The building is of reinforced concrete, faced with brick to conform with the exterior of other new buildings for the University. The project was made possible through Federal grants from the Public Works Administration.

ence and probably will always have its influence, but for other structures, modernism often gave a welcome relief for traditional expression which became more and more inapplicable to many of our present day problems.

Distinguished examples of how this was used when such buildings were built prior to the depression have appeared in past issues of the Architect and Engineer. Opportunities for large work in more recent years appear to be largely confined to public structures made possible through financial assistance from the federal government, and some examples of these will be found in the illustrations with this article.

The modernistic now gives interesting developments in the residential field although for other reasons than those applying to the larger building problems and with greater difficulty supersedes the traditional architectural styles. Whether the style of the new house is to be conservative or "go modern" is determined largely by the desire of the owner for this new development in architectural design or the enthusiasm of the architect in this breaking away from historic precedent. We have now in residential architecture worthy examples of both conservative and modern or an intelligent blending of the two which is perhaps a more fruitful contribution to architectural progress.

When building activity has returned, under more stable financial conditions, with adjustment of disturbing factors now agitating the construction industry and greater recognition of the value of the architect's services which should constantly develop, what architects have done and are now doing in the State of Washington, give ample assurance of an architectural development worthy of the State's opportunities.

LAW BUILDING, UNIVERSITY OF WASHINGTON, SEATTLE

A. H. ALBERTSON, JOS. W. WILSON AND PAUL RICHARDSON, ARCHITECTS

This building, erected on the campus of the University of Washington, provides complete facilities for administration and instruction in the Law Department of the University, with library, lecture rooms and fully equipped court room. The exterior is brick and terra cotta, harmonizing with other recent buildings built on the campus. The roof is slate.

TELEPHONE BUILDING, TACOMA, WASHINGTON
BEBB AND GOULD, ARCHITECTS

This fine example of the architecture of today, as applied to a business building, provides for the exchange service of the Pacific Telephone & Telegraph Company in Tacoma. The construction is of steel, fireproofed with concrete, and designed for the heavy floor loads and story heights required for the dial exchange service equipment. The exterior wall surfaces above the granite base are of brick and terra cotta, produced in variegated colors.

REMODELLED BUSINESS BUILDING, SEATTLE, WASHINGTON

J. LISTER HOLMES, ARCHITECT

This building, on a prominent street corner in the Seattle business district, was entirely modernized with complete new exterior wall covering of travertine with bronze trimmings.

CATHOLIC CHURCH, MEDICAL LAKE, WASHINGTON

John W. Maloney, Architect

The building is interesting architecturally as an attempt to get "functional" and away from traditional church design. According to Mr. Maloney the brick used was second hand, having been taken from houses over fifty years old. The interior shows exposed brick walls with brick altar rail, brick altar painted white, and exposed wood trusses stained a very dark walnut.

PESSEMIERS BOOTERY, TACOMA, WASHINGTON
McCLELLAND AND JONES, ARCHITECTS

This effective treatment of a modern store front is an attractive feature of a main business street in Tacoma. The marble on the wall surfaces is verde antique at the base with Italian vertinos, a lighter green, above. The large panel is of ivory Carrara structural glass. Trim is bronze with awning concealed behind a hinged bronze cover.

INTERIOR OF BEST'S APPAREL SHOP, SEATTLE, WASHINGTON
McCLELLAND AND JONES, ARCHITECTS

This view, although showing a small portion only of the interior of an extensive establishment devoted to women's apparel, gives an idea of the architectural character maintained throughout the building of which a particular feature is the thoroughly adequate provision for the high class of sales service with harmonious color effects throughout.

ANOTHER VIEW OF INTERIOR, BEST'S APPAREL SHOP, SEATTLE, WASHINGTON

McCLELLAND AND JONES, ARCHITECTS

NEW BUILDINGS AT WESTERN STATE HOSPITAL,

FORT STEILACOOM

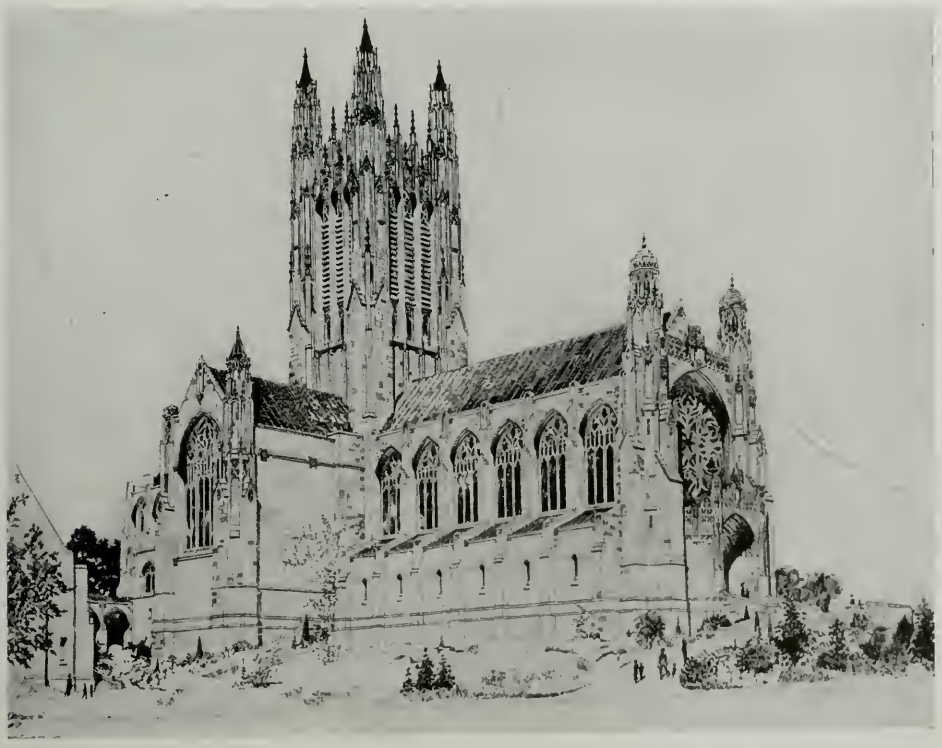
HEATH, GOVE & BELL;
MOCK & MORRISON, ASSOCIATE ARCHITECTS

These new buildings for the State Institution for the Insane in the southwestern part of Washington, conform to a comprehensive program to replace antiquated structures and give additional space for wards and administration. The buildings are of reinforced concrete with exterior walls of light varicolored brick and stone trim. Roof is reddish brown tile.

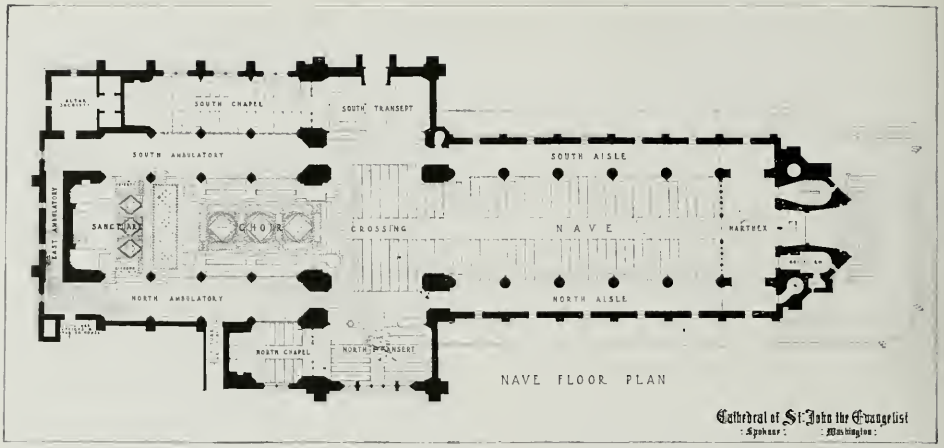
CATHEDRAL OF ST. JOHN THE EVANGELIST,
SPOKANE, WASHINGTON

WHITEHOUSE AND PRICE, ARCHITECTS

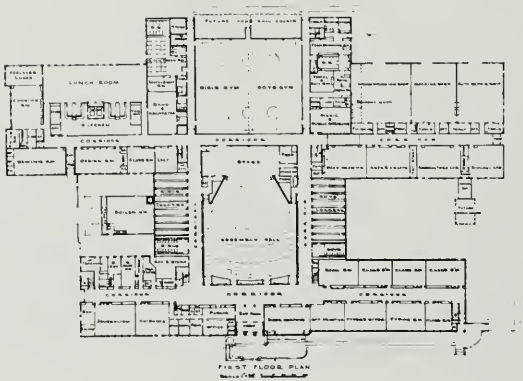
This cathedral for Spokane has been under construction since 1928. The portion now built and in use is the nave, including the west front and the crossing or space under the central tower. The exterior is of fine sandstone from the Walker-Wilkeson quarries in the State of Washington, with all ornamental detail hand carved. The cathedral occupies a commanding position on the highest elevation in the city.



ARCHITECT'S DRAWING, CATHEDRAL OF ST. JOHN THE EVANGELIST, SPOKANE, WASHINGTON



NAVE FLOOR PLAN, CATHEDRAL OF ST. JOHN THE EVANGELIST, SPOKANE
WHITEHOUSE AND PRICE, ARCHITECTS



PLAN, HIGH SCHOOL, BELLINGHAM

HIGH SCHOOL BUILDING, BELLINGHAM, WASHINGTON

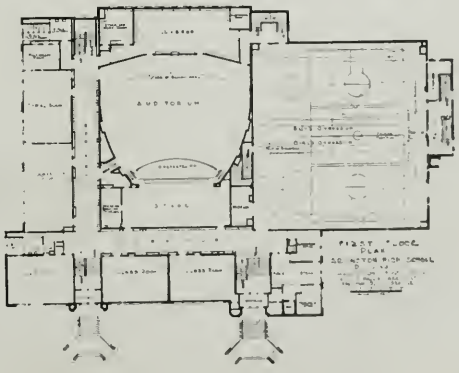
Accommodating 1,800 pupils, the building besides meeting every modern requirement of a high school in the most thorough manner, has a consistent modernistic expression in its architectural treatment. Of reinforced concrete construction, the design of the forms gives an appropriate interesting character to the exposed exterior wall surfaces.

COLMAN FERRY TERMINAL, SEATTLE, WASHINGTON
ARTHUR L. LOVELESS AND LESTER FEY, ARCHITECTS

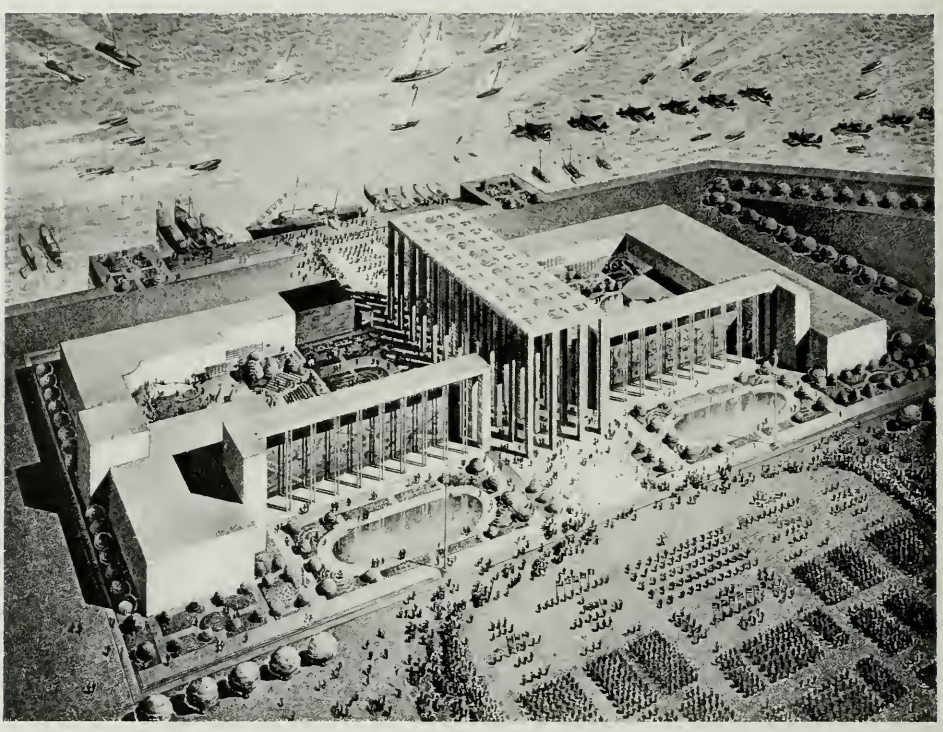
This distinguished treatment of a prominent building on Seattle's water front shows what can be done to make this important section of the city interesting. Besides attracting passengers to the "Black Ball Lines," every facility for handling the crowds is provided in an architectural manner in keeping with the fine exterior.

HIGH SCHOOL, ARLINGTON, WASHINGTON
WILLIAM MALLIS, ARCHITECT

Very satisfactorily solves a problem. The architect specializes in schools, in fact he designs most of the schools of importance in the outlying cities and towns in the Arlington section of the State. Plan and exterior views speak for themselves. The construction is of concrete with exposed outside concrete surfaces. The school has about 500 pupils.



DESIGN FOR WORLD'S FAIR FEDERAL BUILDING



ARCHITECT'S DRAWING OF UNIQUE STRUCTURE TO BE BUILT ON TREASURE ISLAND. OPEN COLONNADE IN CENTER WILL BE 100 FEET HIGH AND 265 FEET LONG. EACH OF THE 48 COLUMNS WILL REPRESENT A STATE

DESIGNED by Timothy L. Pflueger, A. I. A., the Federal Building, at the Golden Gate International Exposition, to cost approximately $500,000, will occupy a site of approximately seven acres, with a frontage of 675 feet and a depth of 435 feet.

The building itself is in the form of a hollow rectangle pierced through the center of the long side by the great Colonnade of States, 100 feet high and 265 feet long. Each of the 48 columns in the Colonnade of States will represent a commonwealth and will be decorated with the flag of each state. Three aisles will lead through the Colonnade, symbolizing the Executive, Legislative and Judicial branches of the government.

Two porticos, each 60 feet high and 190 feet long, extend north and south from the Colonnade of States. The walls of the porticos will be decorated with great murals in brilliant colors. One will deal with the Conquest of the West, and the other with those natural resources that constitute America's heritage.

Located on the eastern side of Treasure Island, the Federal Building faces the Court of the Nation, an area set aside for outdoor events such as ceremonies, concerts, army maneuvers and pageantry. Within the rectangular hollow of the building, extending north and south from the Colonnade of States, are two courts, each approximately 160 by 200 feet. The south court will contain exhibits stressing the government's interest in the individual, its activities in science and invention, housing, development of natural resources, recreation and conservation.

In the north court will be a National Parks exhibit, a Sylvan theatre and the Court of the First American in which Indian ceremonials will be given. Many tribes will participate in these ceremonials. Buildings surrounding the court will contain exhibits showing the peacetime work of national defense units, Indian arts and crafts and Indian history.

To the north of the Federal Building will be the Hall of Western States. To the south are structures of the California state and county groups. From the entrance to the Colonnade of States one may look west across a picturesque lagoon and see the 400-foot Tower of the Sun rising beyond the Court of Flowers and the Court of Reflections.

Construction work will get under way by April 1 and the schedule calls for the building to be completely finished on October 1. An appropriation of $1,500,000 has been made by the Federal government to cover construction, art work and exhibits.

F. H. A. INSURED MORTGAGE SYSTEM OF HOME FINANCING

by C. A. West,

Assistant to the Director, Federal Housing Administration, San Francisco

REDUCTIONS in the cost of home financing and the fact that the Federal Housing Administration now is permitted to insure mortgages for as much as 90 per cent of the appraised value of newly-constructed homes in the lower price brackets, should stimulate activity in the home building industry.

Of paramount importance to a majority of home seekers is that portion of the amendment which pertains to new residential construction appraised at $6,000 or less. The equity necessary to acquire such a home has been sliced in half, from 20 per cent to 10 per cent, and the period of time for which an insured mortgage in amounts up to $5,400 may be written, has been extended from 20 years to 25 years.

A review of building records indicate that a great percentage of future business will come under this phase of the new Housing Act. Mortgages insured on California homes since inception of the FHA plan have averaged in the proximity of $5,000.

Of interest to architects and builders is the requirements that homes, to qualify for 90 per cent insured mortgages, must be of new construction, built under government inspection from plans and specifications approved by the Federal Housing Administration architectural staff. The only exception is an acceptable house built since January 1, 1937 and neither sold nor occupied since completion. All homes financed under these terms must be owner-occupied, and they must not exceed an appraised value of $6,000.

In the next higher brackets, where newly constructed homes reach an appraisal of $10,000, the purchaser is permitted to take advantage of the 90 per cent clause up to $6,000, plus 80 per cent of the appraised value of house and lot above that amount. For example, on a newly constructed $10,000 house the minimum down payment would be $1,400, and the insurable mortgage limit would be $8,600. On all other homes, housing from one to four families, the insurable mortgage limit will remain at 80 per cent of the appraised value, but not in excess of $16,000.

The cost of home financing has been materially reduced, with the result that hereafter the total maximum carrying charge for an FHA insured mortgage will be 5½ per cent. This will include 5 per cent interest and one-half of one per cent mortgage insurance premium. In the case of newly constructed homes securing mortgages not exceeding $5,400, and meeting certain other conditions, the premium rate is one-quarter of one per cent, making a total maximum annual carrying charge to the borrower of 5¼ per cent. Also, the insurance premium in the future will be based upon the outstanding declining balances, rather than the original face value of the mortgage, as provided in the old law.

Elimination of the annual service charge and the reduced cost of the mortgage insurance will represent a maximum annual saving of approximately one per cent to home builders and buyers on newly constructed houses carrying mortgages of $5,400 or less. On all other insurable mortgages the saving will be approximately three-fourths of one per cent per annum.

The FHA insured mortgage system completely eliminates costly secondary financing, and forever frees the borrower from the expense, annoyance and uncertainty of refinancing the loan. The mortgage is repaid in monthly, rent-like installments, which were established under the former regulations.

The new law offers, without doubt, the lowest mortgage rate and most attractive terms ever known in the history of home financing. The purchaser may figure out, in advance, exactly what his home will cost and how much must be budgeted each month to acquire a home of his own. On new construction, and under the most favorable conditions, it is possible to obtain a monthly rate which over the period of the mortgage will average as low as $5.98 per month for each $1000 of the amount borrowed. To this, of course, must be added one-twelfth of the annual taxes and a like percentage of the annual fire insurance premium.

Under these new broad provisions, of benefit to home owners and home buyers, the Federal Housing Administration feels that it is presenting a program which should be a stimulus to the entire building industry. The machinery has been provided for the government to do its part, but the success of the program depends largely upon the wholehearted, voluntary cooperation of private capital and private industry. By that is meant the lending institutions, material and equipment manufacturers and dealers, the builders and developers, and labor.

With each group doing its part, it should not be long before there is tense activity, with industry busy, labor employed, and an ever-increasing number of families housed in homes of their own in accordance with the ideal American standard.

THE NEW F. H. A. PROGRAM

THE following statement, issued by the Federal Housing Administration, summarizes the new program made possible by recent Congressional amendments to the National Housing Act. It is from the February Journal, American Institute of Architects:

The Federal Housing Administration program under the amended law, signed by President Roosevelt on Thursday, February 3, 1938, is designed to assist families of moderate means to obtain adequate and decent housing on the most favorable terms in the history of the country.

In the language of the Senate Banking and Currency Committee, it is intended "to utilize the best available means for achieving a sustained long term residential construction program with a minimum expenditure of Federal funds and a maximum reliance upon private business enterprise."

It deals solely with projects and mortgages that are considered economically sound. It is designed to be largely self-sustaining through the operation of a Federal mortgage insurance system which has been carefully established and successfully operated since 1934.

The Housing Administration is authorized to insure a total of $2,000,000,000 outstanding at any one time and with the approval of the President this amount may be increased to $3,-000,000,000.

"This program," said Administrator Stewart McDonald, "should prove a stimulus to the construction industry but too much should not be expected of it at once. The machinery is here for the government to do its part. The success of the program in the long run, however, depends upon the whole-hearted, voluntary cooperation of private capital and private industry."

Small Homes Financing

The total maximum annual carrying charge for an FHA insured mortgage on which a commitment is issued hereafter will be five and one-half per cent.

This will include five per cent interest and

one-half of one per cent mortgage insurance premium. In the case of newly constructed homes securing mortgages not exceeding $5,400 and meeting certain other conditions, the premium rate will be one-fourth of one per cent, making the total annual carrying charge to the borrower five and one-fourth per cent.

The annual service charge of one-half of one per cent which the lending institutions have been permitted to charge under FHA regulations will be discontinued on all mortgages for which a commitment to insure is issued hereafter.

The insurance premium of the future will be based upon the outstanding balance instead of the original face value of the mortgage as provided in the old law.

Elimination of the annual service charge and the reduced cost of the mortgage insurance will represent a maximum saving of approximately one per cent per annum to home builders and buyers on newly constructed houses carrying mortgages of $5,400 or less. On all other insurable mortgages the saving will be approximately three-fourths of one per cent per annum.

On newly constructed houses appraised at $6,000 or less, the minimum permissible down payment or equity requirement will be reduced from twenty per cent to ten per cent. Thus, on a $6,000 newly constructed house, the minimum down payment would be $600 and the maximum insurable mortgage would be $5,400, representing ninety per cent of the appraised value.

On newly constructed houses appraised at $10,000 or less, the insurable limit will be ninety per cent of the appraised value up to $6,000 plus eighty per cent of the appraised value above $6,000. For example, on a newly constructed $10,000 house the minimum down payment would be $1,400 and the insurable mortgage limit would be $8,600. On all other homes housing from one to four families, the insurable mortgage limit will remain at eighty per cent of the appraised value, but not in excess of $16,000 under any circumstances.

Multi-Family and Group Housing

Under the amended law, the multi-family and group housing program is divided into two main parts, one designed to promote construction of large scale projects covered by mortgages up to $5,000,000 and the other to encourage building of smaller developments covered by mortgages ranging from $16,000 to $200,000.

An important feature of the new program is the provision for insuring mortgages not only on multi-family structures, but also upon developments consisting of single family houses. Under this provision it will be possible for developers to obtain blanket mortgage financing, including funds advanced for construction, on groups of single family houses and then sell them on convenient payment plans or rent them as they see fit.

The regulations will permit partial releases from the blanket mortgage as separate properties are sold.

The Federal Housing Administration will insure mortgages up to 80 per cent of the appraised value of projects provided that, in the case of large scale developments constructed under Section 207, the amount of the mortgage may not exceed $1,350 per room, and in the case of the smaller developments built under Section 210, the mortgage may not exceed $1,150 per room.

The maximum interest rate which lending institutions will be permitted to charge will be 4½ per cent on mortgages insured under Section 207 and 5 per cent on mortgages insured under Section 210.

The mortgage insurance premium will be charged at the rate of one-half of one per cent annually on the outstanding principal of the mortgage.

The multi-family and group housing operations will be carried on separately from the small homes program designed primarily for individual ownership. A separate insuring fund of $1,000,000 has been set aside out of appraisal fees collected by the Federal Housing Administration during the past three years.

The Federal Housing Administration large scale housing program should not be confused with the slum clearance and government subsidy program of the United States Housing Authority. It is aimed primarily to promote the construction of housing facilities for wage earning and salaried families who by preference or necessity live in rented dwellings. Such families make up the great majority of the urban population and they, therefore, constitute the broadest market for new housing. According to the 1930 census, approximately 56 per cent of all urban families in the United States occupied rented dwellings. The 93 cities of 100,000 and over range in the proportion of renting families from a high of 78.6 for New York City to a low of 37.3 for Tacoma, Washington.

At the same time the program provides exceptional opportunities for sound investment. This is true for two principal reasons. First, the relative breadth of the rental market and second, the planning and construction of the project.

Modernization and Repair Program

Notices have been sent to 7,000 lending institutions throughout the United States authorizing them to begin making modernization and repair loans under Title I of the Amended Act.

Persons, partnerships and corporations are eligible to borrow money under the modernization and repair credit plan. The borrower must have an assured income, demonstrate his ability to repay the loan, and own the property to be improved or have a lease on it running at least six months longer than the term of the loan.

Amounts up to $10,000 may be borrowed to repair or improve existing structures and amounts up to $2,500 may be borrowed for the erection of new structures.

Repayment of the loans may be spread over a period not to exceed five years for modernization and repair work and not to exceed ten years for the erection of new structures for residential use.

Banks and other lending institutions will be insured against losses up to 10 per cent of the total loans they make under the new Title I program.

If the loan is made for the purpose of building a new home, security will be required in the form of a mortgage or deed of trust covering the property improved. In addition, there will be certain general construction requirements which will assist in protecting the investment of the home owner.

The provision for these new homes costing not in excess of $2,500 under Title I should not be confused with the plan of home ownership sponsored under Title II of the Act. The facilities afforded under Title I are intended primarily for those citizens who live on farms, or in rural areas or in the marginal zone surrounding the larger cities where the standards established by the mutual mortgage insurance system are not applicable.

Operations Under Old Law

Gross business transacted by the Federal Housing Administration under the old law has passed the two billion dollar mark.

Approximately $650,000,000 of this amount was transacted during 1937.

The gross total includes:

Mortgages selected for appraisal, $1,399,000,000.

Large-scale housing projects approved, $41,694,000.

Modernization and repair notes insured, $560,603,000.

Notwithstanding the decline in construction activity during the last half of 1937, gains were recorded in the volume of business for the entire year over 1936.

For example, mortgages selected for appraisal during 1937 amounted to $590,100,000 compared to $538,900,000 for 1936, a gain of 9.5 per cent. Mortgages accepted for insurance in 1937 totaled $448,167,000 compared to $438,449,000 during the previous year, a gain of 2.2 per cent.

The largest gain was made in premium paying mortgages. In 1936 premium paying mortgages amounting to $308,945,000 were recorded,

while in 1937 they amounted to $425,110,000, a gain of 37.6 per cent. The total of premium paying mortgages on January 28 was $857,996,317, not including those on large-scale rental projects.

During the past year mortgages on newly constructed homes represented approximately fifty-six per cent of the total value of mortgages accepted for insurance.

Through appraisal fees, premium payments, and reinvestment of funds, the Federal Housing Administration now has an income averaging $600,000 a month. Part of this is being used under the terms of the National Housing Act to defray expenses of insuring operations and part of it is being added to the mutual mortgage insurance fund to meet possible losses. This fund now amounts to approximately $22,000,000 and losses chargeable against it are slightly in excess of $10,000. The loss ratio on mortgages insured is approximately one one - thousandth of one per cent.

Architectural Advice for Home Builders

A WIDE acceptance of the Federal Home Building Service Plan, through which expert supervision of home design and construction will be made available to families in the lower income brackets, was reported by the Federal Home Loan Bank Board. Home financing institutions, architects, contractors and material dealers in many key cities throughout the country are adopting the plan for use in their own communities in preparation for the coming spring home construction activity, it was stated.

The Federal Plan was designed to serve the 80 per cent of American families whose incomes of less than $3,500 a year restrict them to homes costing $7,500 or less. It is in this field, it was pointed out, that shoddy construction has been prevalent in the past. Through the Plan, the home seeker is assured sound financial counsel by his lending institution; architectural aid in selecting a design suitable to his family needs, site and neighborhood; a qualified contractor; specification of materials and a check on those materials, and supervision of construction. On completion, the home is registered and a certificate of supervised construction issued.

Expansion of the Service Plan was marked chiefly in the closing months of 1937 by developments in Arkansas and Oklahoma. In Little Rock, 23 home lending institutions signed an agreement to restrict the most liberal loans and terms to borrowers who agreed to utilize a program of supervised construction. And in Oklahoma City, eight Federal savings and loan associations combined to inaugurate a comprehensive campaign under the Plan.

The Associated Home Architects of Arkansas issued a portfolio of 110 small home designs for the Little Rock project, while the Oklahoma Small House Bureau, established by resolution of the Oklahoma State Society of Architects, is completing a similar layout. Lumbermen, material dealers and contractors have indicated their cooperation in both states.

Every element in the building industry has been included in a movement widely publicized in Memphis, Tenn., and a variety of home designs has been made available for the South. In Minneapolis and St. Paul, where 11 Federal savings and loan institutions have banded together under the Plan, active cooperation has been extended by Mayor George Leach's "Build Minneapolis" Committee, City Planning Engineers and City Architects, the two Builders Exchanges, the Associated General Contractors of Minnesota, and the leading lumbermen's associations. Twenty-two architects there, under the name of the Architects Small Home Service, have prepared designs appropriate for the Northwest for an intensive building drive to be launched this spring.

Other architectural groups have been organized in key population centers such as St. Louis, Boston, Cleveland, San Francisco, Denver, and Jackson, Miss.

WITHOUT THAT PIPE THE CONSTRUCTION "BOSS" OF SAN FRANCISCO'S WORLD'S FAIR WOULD BE AS UNHAPPY AS THE WIFE OF BROTHER CRAWFORD

WORLD'S FAIR BUILDERS

WILLIAM P. DAY

FROM his Cathedral Apartments penthouse, on the peak of swanky Nob Hill, William Peyton Day can see miles of San Francisco, the rolling green hills of Marin, the ships that sail through the Golden Gate.

For the last few months—when home—he has stood by his window and watched an island grow from the black depths of the historic Bay; today he is watching a magic city rise upon his 400-acre man-made island.

Professionally ambidextrous, and a consistent doer of the impossible, Mr. Day is vice-president and director of works of the Golden Gate International Exposition. Not only a nationally famed engineer and architect, Mr. Day is "boss" of construction for a $50,000,000 World's Fair.

It's a big job, and Mr. Day knows it. "But," he has been known to say, "I'm damn fool enough to have my neck out and here I am."

Mr. Day, one of the very few men in the country licensed to practice both architecture and engineering, took all the original borings himself in the square mile of sea-water which is now Treasure Island, the largest man-made island in the world. He supervised the building of the island, and now watches a city rise.

To him is charged the duty of planning every detail of construction of the exhibit palaces and other buildings of the Exposition. Dozens of structures must be completed before the Fair opens on February 18, 1939. Problems of sanitation, horticulture, water supply, highways, transportation, freighting, illumination—all the problems of building a city in the middle of the bay from foundation up—are his. Mr. Day has the assistance of a board of architectural advisers and while he is not personally preparing architectural sketches of any of the Treasure Island buildings, he is dictating the policy regarding the entire design and all construction is being done under his direction.

In addition, he is also acting as chief engineer for the Exposition, but has no board of consulting engineers as is customary in jobs of this scope.

The story of one of his "impossible" tasks in connection with the Exposition will probably go down as a legend in the annals of world's fairs.

In 1935 representatives of the Federal government told Mr. Day he faced a loss of a government grant amounting to 45 per cent of $4,200,000 unless he could start work in twelve days on an exposition building.

"It's just too bad," Uncle Sam's agents said, "but you can't do it." This of course amounted to waving a red flag in his face.

"What do you mean, can't?" said Day.

He searched San Francisco, found a city-owned lot at Stockton and Bush Streets, spent eleven days and nights drawing plans, and on the twelfth day saw the ground break for the present administration building of the Exposition.

* * *

From a more personal angle: Mr. Day received his preparatory training at the California School of Mechanical Arts, and earned his Bachelor of Science and Civil Engineer degrees at the University of California. In 1908 he

[Please turn to Page 46]

NOW — THE "RUMPUS" ROOM

RECENT years have seen many innovations in architects' house plans, not the least important being the introduction of a "rumpus room," which has met with instant favor because it seemed to have filled at once a two-fold need. First, it provided a place for the young folks, or the entire family and the neighbors, to assemble for a good time. Games for the youngsters, dancing for the collegiate, cards for the elders. Second, the rumpus room has been the means of "dolling up" an otherwise unattractive basement. Many architects, pressed for room space, have discovered in the cellar the answer to their problem. Even the none too clean furnace room of the past, today, with its modern equipment, offers attractive possibilities for either jinks room or rumpus room.

Fred Merish, writing about the "personality of the cellar" in the Rotarian, says :

"The cellar has always been considered rather—well, 'low-brow,' a domestic outcast to be shunned except at furnace-feeding time. It has been the household underworld, dismal with old papers, ashes, rickety furniture, reeking with fumes of laundry soap.

"But, of late, the cellar has been coming up in the world. Automatic furnace stokers, or oil, gas, even electric heating plants, are leading householders to discover that this Sahara of the home can be made to blossom, even as the rose. 'Tis said even the word 'cellar' is becoming passe in ultramodern homes. Basementorium to you!

"But basementoriums are not what I'm talking about. Basementoriums aren't playrooms, created to enrich the design for living, but an extension of the upstairs with period furniture and oil paintings and that sort of thing. My brief is for a basement done over to express the gayer, playful moods of its owner, a place where young and old can foregather of a winter evening to romp, ride a hobbyhorse, or simply play cards—and never a worry about scratching the furniture! . . . "

Architects need not draw heavily upon their imaginations to work out for their clients a glorified basement, reflecting the owners' personality. If the owner has a "yen" for the sea, let the portholed walls, the ship lanterns, the prints on the walls, the hammocks, the shuffleboard pattern on the floor, express it. Again, one may miniature a Paris sidewalk cafe, treasured perhaps, in the memory of his client.

Quoting again from the Rotarian, we learn that "one businessman, having a warm spot in his heart for the American Southwest, scene of an unforgettable summer vacation, carried out the Pueblo Indian motif, with Mexican variations. The chairs, secured through a Texas importer, were of tinted cedar withes, criss-crossed at the base, with pinkish-brown pigskin stretched over the seat and back. On the walls were mural paintings of Pueblos beating the tom-tom, dancing, making ritualistic obeisance to the sun."

Simplicity and practicality are the keynotes of face-lifted cellars and for them there's no better word than "rumpus room," the place for the household rioting and hilarious fun making. Architects planning rumpus rooms should keep in mind equipment needs and provide the necessary lay-out. A second hand piano should be a first consideration for singing and dancing while a ping-pong table is cheap insurance

YES, THIS IS A BASEMENT, BELIEVE IT OR NOT. THE PICTURE REVEALS THE RESULT OF A LITTLE SYSTEMATIC PLANNING AND DECORATING

against party boredom—and a problem boy; also a punching bag, a handball court, a regulation golf-driving net and a billiard table.

Stable all the family's hobbyhorses in the rumpus room! If it's photography, install a darkroom in the corner where you have running water. Many a cellar these days can at a minute's notice be turned into a cinema little theater. When guests drop in unexpectedly, doors of a cubbyhole open like Pandora's box to emit folding chairs. A twist of the wrist and a silverscreen unrolls from the wall.

Courtesy Southwest Builder and Contractor

EL CERRITO SCHOOL, LOS ANGELES, CALIFORNIA
Charles M. Hutchison, Architect

USE OF CHEAP PRODUCTS FOR WATERPROOFING STUCCO

by William Carter Rea

"BEWARE of Stucco that has been cheaply waterproofed." This phrase of caution is being drilled into salesmen, old and new, in the paint industry today. Today, more so than at any time in the past, because today and tomorrow and for the next several years to come, paint manufacturers will be scratching their heads and wondering whether or not they should sell their products for repainting stucco surfaces.

This condition of uncertainty has been brought about because the greatest potential amount of grief, financial and otherwise, stares the paint industry in the face, whenever a stucco job is in the offing. And here is the story:

Until 1932, when stucco had been more or less an irritating canker, it has grown to become a malignant cancer in the side of the paint industry in California. Before the depression, a painter was an artisan, trained through an apprenticeship, competent, and proud of his skill. With the depression years of 1932 and 1933, men in all walks of life were driven by desperation to seek an existence by any means at their disposal. Painting seemed to be an easy out and thousands turned to the pot and brush as a likely means of employment. Without benefit of apprenticeship training, experience was gained the hard way, through the old school of trial and error.

With better times, a considerable number of these men continued in their new found trade, with fair prospects of a livelihood. Some became artisans, some fair mechanics and some have drifted into painting practices that have always been tabooed by any self-respecting painter of the old school.

Because of the great number of stucco buildings in California and because of the porosity of this type of material, the field of stucco water-proofing became the bonanza of the few. Here was a field that did not require the skill of the artisan and one in which few could detect the untrained hand of the applicator. It was a field that could be easly exploited by the unscrupulous, and into which, like every other trade, a small percentage have drifted.

As every architect knows, the paint industry has always advocated a clean surface, free from dust, dirt and grease. All standard specifications carry this phrase in one form or another, because it is a basic requirement for a good, clean, lasting job. It is also a generally accepted practice to steer clear of any surface that contains a grease, wax or oil coating, unless or until it has been specially treated to neutralize or remove the offending coat or film. This is not only a standard practice, but a basic prerequisite. Anyone remotely connected with paint knows that a paint film will not adhere to a petroleum oil, wax or grease treated surface. Yet architects, contractors and builders, if not actually specifying materials containing these products, are permitting their application on stucco buildings.

It is true that some of these products are manufactured by reputable concerns, particularly those products containing wax. But in every instance where such is the case, the manufacturer warns against the use of paint in recoating the surface. A paraffine oil is sometimes used, but here again, you will not find any of the larger oil companies promoting this type of product as a stucco water-proofing agent. The companies themselves do not specify it on their own structures and this should be ample proof of its undesirability.

While waxes and oils are grief producers, the amount of water-proofing done with these

materials is not as serious a problem at the moment as is the third product of this group. This is probably due to the large price differential prevailing between the three types of material.

Grease or tallow, the base of the triangle, is the champion headache producer for the industry. Whitewash, Tallow Base Whitewash, Government Specification Whitewash, Water Coat, and Whitewash under any of a dozen other names, is still Whitewash, the largest source of grief to the painting industry.

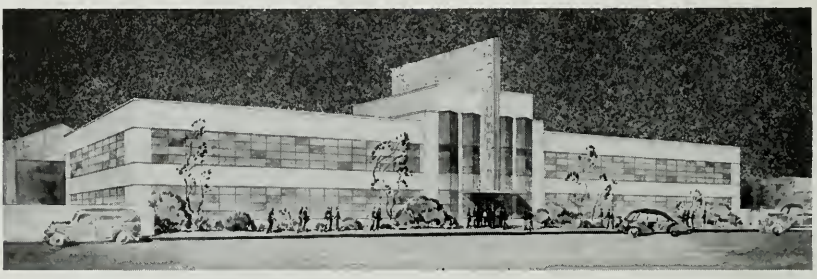
Until recent years, whitewash could not be purchased as such in a ready mixed form. However, you could buy the ingredients and mix it yourself. The use of whitewash was restricted mostly to the farming communities and to the painting of trees, rocks, fences, etc. Even in the cities, its use was restricted and no one ever thought of painting his house with it, let alone structures running into the tens of thousands of dollars. But this is 1938. Science and progress have made it possible to do many things, heretofore undreamt. So whitewash has taken on a new and fancy name, becomes a water-proofing agent par excellent and moves into Park Row direct from the farm.

Stucco water-proofing concerns have sprouted up like weeds after a spring rain. A little lime, a little tallow, an old steel drum, a water faucet and a paddle, these are the principal requirements to start business as a manufacturer and dispenser of the paint industry's greatest bug-a-boo.

But it is not the paint industry alone that pays. It is the ultimate consumer, the property owner, who must stand his just share of the bill. For once a building has been coated with any one of these three types of preparations, 99 per cent of the products of the paint industry, when applied over a surface thus treated, will pop and peel all over the place. In order to put the surface into condition to receive a first class paint job, the owner must go to the additional heavy expense of having the building sandblasted.

When a previously treated surface has been painted over, it's but a short time after completion that the indignant owner calls on the painter to give an account of himself. The painter alibis that it must have been the fault of the material. The dealer blames it on the manufacturer, and in order to hold the good will of all three in the transaction, the manufacturer as a matter of business policy, swallows hard, digs deep and reimburses all the injured and innocent victims for something that he could not remotely be blamed. These demands have been altogether too frequent during the past two years. The prospects for the future of stucco look anything but bright, and so the manufacturers are beginning to call a halt. If they have the least inkling that a stucco surface has been water-proofed by any of their pet aversions, they will drop the job like a red hot poker.

Stucco can be water-proofed by paints produced by oil and water paint manufacturers. There are many reputable products on the market that are made and backed by reputable concerns. Water-proofing with a reliable paint product, means years of satisfaction and service. The use of inferior and unknown materials means that the surface must be recoated in a few months to a year or so at best, and there is always the possibility of trouble to come.



NEW OFFICE BUILDING FOR THE COLUMBIA STEEL COMPANY, LOS ANGELES

Building Highways in California

A Tribute to the Engineer

by ERNEST McGAFFEY

"IN THE MAKING"—BLASTING A SECTION OF A NORTHER
CALIFORNIA HIGHWAY, FEATHER RIVER, PLUMAS COUNT

IN California's early era, wheeled vehicle transportation was mainly confined to the ox-drawn carreta, if that could be called a wheeled vehicle. Much later came the wagons, horse or mule-drawn. These were the horse and buggy days, and they continued almost to 1900. The very first ambitious introduction of the automobile and the automobile truck, a few years after, was met by fleers, jeers, or unqualified bitterness. In the files of California metropolitan newspapers of 1900 and possibly before, repose editorial and news article assurances to the public that horse-owners need not fear the new-fangled machines would ever drive their horses and buggies from the streets.

And then, all of a sudden, it happened. Old-fashioned methods of transportation blew up with a loud report, and motordom scattered automobiles, trucks, buses, stages and motorcycles all over the State, from the Mexican border to the state lines of Oregon and Nevada. The glory of "Ichabod" had departed. The horse was displaced, the mules turned out to eat cactus, and the wagons and buggies left in the barns. By 1910 the rout was complete, the old regime was conquered and the jig was up.

California in 1910 passed its first State Road Bond issue of eighteen million dollars, and the crusade was on for more and better highways. Here was the money, but where were the roads? Scientific road construction in America during the horse and buggy days, particularly in the rural districts, was unheard of. Those who lived in the country in very many of the States "worked their taxes out" on the roads. A team of mules or horses, a road "scraper", as it was called, shovels, axes, hammers, ten-penny nails, maybe a crow-bar, and in some cases, where a big boulder, or the crest of a hill needed to be removed, a few pounds of black powder in addition, was the bulk of the equipment.

Crudity and impermanence was the order of the day. Drainage was ignored. Bridges, when in bad order, were knocked together with maybe a board or two, or a sapling chopped at the ends to let the big nails through. In the winter, and in the spring, these roads were often impassable. In summer they were deep with dust. They were gridironed with deep ruts, and rougher than a mother's reception of an erring daughter. They crucified the farmers on a cross of mud.

With the arrival and adoption of the automobile and the motor light and heavy trucks, and the humble, but potent "trailer," there went up, everywhere, an unanswerable demand for good roads—and plenty of them. The Automobile Club of Southern California, im-

"IN THE MADE"—ROOSEVELT HIGHWAY, FRINGING THE PACIFIC OCEAN IN LOS ANGELES COUNTY

mediately on its incorporation in 1900, had adopted for its motto the slogan, "Good Roads." The California State Automobile Association in the north, from its earliest organization, was another champion of better highways. The State Highway Commission was a third crusader along the same lines. Various semi-public bodies rallied to the cause, Chambers of Commerce lent their aid, and the press also inclusively supported the movement.

Certainly California needed and wanted Good Roads. In 1915 and 1919 fifty-five more million dollars were voted in State Highway bonds, and the counties of the State, in addition, were spending large sums on their highways. A number of them passed county road bond issues of from one hundred thousand to as high as two million three hundred thousand dollars. There was money enough provided, but as imperatively as money is required, it alone cannot construct good roads.

The tools to the men who can use them. The Engineers are the architects of the highways. In the last analysis, on their shoulders rests the responsibility of "delivering the goods." There may be approximately several hundred actively engaged highway engineers in America. There is at least one for each State, not counting the unemployed ones. Highway engineers, of course, have assistant engineers and able ones.

Neither chief engineers nor assistants are, as a rule, political appointees, or at any rate, if politics has figured at all in their selection, they have to be thoroughly qualified for their positions.

No mere political favorite would stand a Chinaman's chance in a highway engineer's office as chief or assistant engineer. He might be as brilliant as the fires of Hell in other lines, but if not thoroughly qualified as to the pro-

fession, he would be as much out of place as a kangaroo in a diving-bell.

Travelers along a highway where scenic beauty is remarkable, are usually loud in their praise of the treat which Nature has provided for them. Often it is along roads literally blasted from steep mountain sides, cut through dense forests, tunneled under solid rock and bridged over frowning chasms. I wonder how many of them think of the brain-work, experience, and natural ability that has gone to building such a road. These thoroughfares have not been tossed off like a game of football, but have demanded time, study, calculation, tenacity and infinite patience.

Consider, for a moment the route: It must be computed as an entirety, and yet be subject to modification. No obstacle that Nature has thrown up but what can be conquered by modern engineering. It has constructed highways as high as where the condor soars in South America, and in the United States the eagles circle below the elevation of many mountain highways built by American engineers.

Consider the problem of subgrades and surfacing, of drainage and grades, of width and thickness, of curves and "shoulders." And as to bridges, the problem of height, width, the building of approaches, protection against floods, material of the bridge proper—concrete or steel, must be met and attended to. Consider the question of the cost of the completed highway. If a State-constructed or a contractor-built road, it must be done within the allotted sums, unless otherwise provided; and it must be carried on strictly as to reliability of material.

Long experience, a natural aptitude for the work, technical skill, mathematical precision, hard commonsense, physical endurance, and mental ability must combine to attain eminence in this profession. Experiments as to many details connected with the work are inevitable. As traffic increases, as automobile trucks continue to assume elephantine proportions, and carry enormous loads, new problems must be solved concerning the traffic lanes.

It can be confidently asserted, that a Highway Commission's work is never finally finished. And where now are the primitive road "tools" of the years from 1835 to 1885? "Gone where the wood-bine twineth." Modern highway building employs specially manufactured machines and appliances, some of them of tremendous weight and power, capable of doing the work of a number of men. While manual labor is demandable, these colossal inventions, together with a free use of powder and dynamite, absolutely defy resistance of rock, chasm, or mountain-side.

California has had one prime advantage in its highway building, and that is the climate. As a rule, the surfacing is not subject to the long and fierce extremes of heat and cold which assail the roads of many States of the Union, and for this favor of the elements the State should be grateful. Long and bitter winters, alternating with extended summers of furnace-like heat, are exceedingly difficult to contend with, even using the utmost care and diligence, as well as the best of material, when it comes to constructing highways.

Men may come and men may go, but the Highway System of the Golden State, unless its revenues are hawked at and seized by the mousing owls of the Legislative roosts, will doubtless go on forever. This System is the foundation on which California's future rests. Transportation is not only the lifeblood of commerce, but it enters into every effort of the human race, and the well-being of every walk of life. To interfere with the welfare of this great System would, indeed, be like killing the goose that laid the golden eggs.

Millions of tourists and travelers travel over its roads annually. Millions of dollars are distributed by them through practically every channel of trade and calling. They are the records and the achievements of the Highway Engineers. But for these men there is comparatively little mention on the pages of history, and even less trace in song or story. Yet to the thoughtful man or woman, knowing how much this virile stewardship has meant to the progress of the State comes the echo of the commendation:

"Well done, good and faithful servant."

WORLD'S FAIR BUILDERS
William P. Day

[Continued from Page 38]

formed a partnership with John B. Leonard, under the firm name of Leonard and Day, consulting engineers. This partnership was dissolved in 1915, and in 1916 Mr. Day merged talents with Charles Peter Weeks, architect.

Among the buildings designed by Weeks and Day were the State Library and Courts Building and the State Office Building at Sacramento, a job won in a nationwide competition with sixty-four of the most prominent achitects in the country. Other highlight buildings on Mr. Day's list are: Mark Hopkins and Sir Francis Drake Hotels, Chronicle Building, Huntington Apartments, Don Lee Building, Cathedral Apartments, the St. Claire Hotel and office building at San Jose, the Loew's State Theater in Los Angeles, the Fox West Coast in San Diego and Oakland, and the Orpheum in Oakland.

In 1927 following his partner's death, Mr. Day continued the business by practicing both architecture and engineering.

Mr. Day is fifty-four, married, and the owner of a dynamic personality. Collects and smokes pipes; has scores of them both at home and at the office. As fast as one goes out, he lights another.

ARCHITECTS SHOULD HAVE THESE

The following new documents are of great value and should be in the hands of every architect in the country. Copies may be obtained by addressing the Federal Housing Administration, Washington, D. C.

National Housing Act As Amended—Including all amendments to February 3, 1938 (F. H. A. Form 107).

Mutual Mortgage Insurance — Administrative Rules and Regulations, revised February 15, 1938 (F. H. A. Form 2010).

Multifamily and Group Housing Insurance — Administrative Rules and Regulations, revised February 15, 1938 (F. H. A. Form 2012).

Property Improvement Loans Under Title I of the National Housing Act Amendments of 1938 — Regulations Effective February 4, 1938 (F. H. A. Form 1).

Eligible Improvements To Property—Financed Under Title I, National Housing Act Amendments of 1938—Effective February 4, 1938 (F. H. A. Form 145).

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ARCHITECTS' BULLETIN

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Northern Section

STATE ASSOCIATION MEMBER
OF THE
AMERICAN INSTITUTE OF ARCHITECTS

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Harris C. Allen

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Meeting of Association and Chapter

A JOINT meeting of the Northern Section of the State Association and the Northern California Chapter of the Institute was held March 1st at the Commercial Club in San Francisco. It was one of the memorable events in our records. Approximately one hundred were present, including some of the outstanding leaders of the profession—such as Arthur Brown, Albert Farr, John Donovan—and also many of the younger architects who will have a growing share in Association activities.

After enjoying the beautiful singing of Earl Grosh (of the Paraffine Company), and a brilliant satire in verse "Fables in Style" written by Irving F. Morrow, President Michelsen turned the meeting over to Warren Perry, President of the Chapter, who introduced the speakers of the evening in his usual happy vein. Albert J. Evers spoke on Standards of Practice. He reviewed briefly the mutual friendly and co-ordinating relations that have existed between Institute and Association in California, the common ties and interests that bind all architects together, and outlined the essential features in the new document on practice now being prepared by the Institute Committee on State Organizations, for the use of all architects—and the public also. This document, recently described in the Bulletin, clarifies the fundamentals of good practice, which can and should be accepted by all architects, in relations to clients, contractors and other architects. Mr. Evers pointed out that architects would be protecting their own business interests, as well as promoting the reputation and standing of the profession generally, if they lived up to these fundamentals as outlined in the new document, soon to be published.

Frederick H. Meyer spoke on Prospects of the Building Industry, and referred to the regular cycles of about 18 years which have marked peaks in this country for nearly 100 years—which should bring pronounced activity for the four years up to and following 1942, even if somewhat delayed in the start. In a strictly impersonal way he charged the profession with considerable responsibility for the growth in public and private architectural bureaus, and suggested means to counteract this trend.

The principal speaker, David J. Witmer of Los Angeles (Past Regional Director, A. I. A., and Chief Architectural Supervisor for F. H. A. in the South) spoke on Relations between Institute and State Associations. He mentioned several different proposals which had been made for different types of national organization, and expressed his own opinion that the present form of voluntary affiliation by State Associations with the Institute would work out most satisfactorily, with slight modifications if necessary. To present the common interests of the entire profession to the public—that is, to inform the public to the widest possible extent of the nature and value of architectural service—which is the real cause for unification of all architects in national affiliation, he suggested, as a vital factor, building up contacts with the great mass of small house builders, the "bottom half of the building pyramid" as he expressed it. Although many efforts have failed to enable architects to offer this type of

service, he believed that a practicable plan had now been evolved, and described in brief detail this scheme which is now working out well, it is stated, in Tennessee, and has just been put into effect in Los Angeles. The course of this service plan will be watched with great interest.

After a report by John Donovan, replete with his customary wit and eloquence, on the problems to be faced in the effort to secure commissions on State building projects for private architects and engineers, the meeting adjourned.

ADVISORY COUNCIL

Prior to the Section meeting, President Michelsen presided over a meeting of Advisors from various districts. After adequate discussion, action was taken recommending that a special committee be appointed to assist the Marin County district in its fight to correct discriminating local ordinances; that certain inequities in connection with small house competitions and exhibits be recognized and avoided in the future; that the Association continue to be actively represented in such allied art activities as the San Francisco Federation of Arts.

COMMITTEE WORK

It will not be President Michelsen's fault if committees of the Association do not function actively and effectively in 1938. His recommendations for committee work are so complete and so stimulating that it seems desirable to publish them for general information, and with the prespect of volunteer assistance from members at large who may be interested. The transmitting letter follows:

"To enable the members of committees to obtain a combined understanding of the activities for the ensuing year, there is attached hereto an outline description of the recommendations that may be followed by each group, if it so desires. In formulating this outline of suggestions, we have included certain salient subjects, and sincerely believe that better results will be attained by concentrating our efforts on items of major importance and on the Resolutions that were adopted at the Tenth Annual Convention of our Association, rather than endeavoring to cover the entire field in a general way. From time to time, your Executive Board may assign to you other subjects that need attention.

"In selecting the members of the committees, careful consideration was given to their capability in leadership and to their ability and dexterity in performing the duties that have been assigned to them. Each group will perform an important function, and may consider itself as a branch of the Executive Board, which will be at your disposal at all times, and will be ready to assist you whenever the opportunity presents itself.

"Under the direction of the Executive Board, each committee may function, as a whole, on its own volition, may assume responsibility, and hold meetings, and should cooperate with other committees in performing the duties that are essential for the betterment of the profession and your Association."

RECOMMENDED ACTIVITIES

1. Governmental Relations Committee

A. Outline a legislative program for the next session of the State Legislature.

B. Formulate laws and ordinances for the benefit of the State Board of Architectural Examiners and the District Societies.

C. Make recommendations for legislation which permits the commissioning of architects in private practice on public buildings.

D. Develop friendly relations with governmental agencies and officials.

E. Cooperate with the building industry on matters pertaining to legislation.

2. Professional Relations Committee

A. Encourage better professional relations between architects.

B. Establish friendly contacts with the American Institute of Architects, State Association of Architects, Engineers, Building Industry Conference Board.

C. Improve office practice and publication of office forms.

D. Instigate architectural education (through cooperation with the A. I. A.).

E. Make recommendations for fair minimum fees.

3. Industrial Relations Committee

A. Develop a better understanding between the architects and the Building Industry.

B. Unify the Building Industry insofar as effective and beneficial legislation is concerned.

C. Promote agreeable connections with the Producers' Council, Associated General Contractors, California State Chamber of Commerce, Building Industry Conference Board, and labor organizations.

4. Financial Relations Committee

A. Establish relationships with banks, building and loan associations, and other lending agencies.

B. Maintain contacts with the Real Estate Board and other groups interested in land developments.

C. Keep the members of the Association informed, through the Editor of the monthly Bulletin, on the conditions affecting building loans.

5. Technical Relations Committee

A. Contribute to the development of a Uniform Building Code.

B. Formulate technical laws and ordinances pertaining to the construction industry.

C. Make recommendations on other matters relating to technical subjects.

6. Public Relations Committee

A. Encourage public education through the press, exhibitions and lectures.

B. Promote the publication and distribution of literature.

C. Supervise the publication of the Northern Section, monthly Bulletin in "The Architect and Engineer."

7. Architects' Board of Control

A. Promote amiable relations with "The Architect and Engineer" and the "Report Service."

B. Stimulate the Building Industry to recognize "The Architect and Engineer" as a leading publication.

C. Obtain greater cooperation among the architects for the benefit of the "Report Service."

8. District Societies Committee

A. Stimulate and guide the local activities of the District Societies.

B. Cooperate in the solution of local problems.

C. Acquire their support for legislation.

9. Entertainment Committee

A. Make necessary arrangements for meetings of State Association.

B. Assist the Industrial Relations Committee where entertainment is required.

C. Incite more social activities in the State Association.

10. Convention Advisory Committee

A. Submit a preliminary outline of business and social activities to be concluded at the 1938 Convention.

B. Recommend a location for the 1938 Convention, one that will be agreeable to the majority of the members of the State Association.

C. Nominate the personnel for all Convention Committees.

11. Draftsmen's Organizations Committee

A. Cooperate with the draftsmen in forming a state organization.

B. Influence a better relationship between architects and draftsmen.

C. Encourage a perpetual architectural education.

12. Treasurers Committee

A. Control general finances.

B. Increase the active membership of the State Association.

C. Collect subscriptions in a business-like manner.

1938 HOME SHOW

The Executive Board has endorsed a proposed Home Show to be given on the second floor of the Building Material Exhibit at 557 Market Street, San Francisco (in front of the Association office). This will feature sketch plans for small houses and will be open 1-10 P.M. weekdays and 1-5 P.M. Sundays, until April 2. Newspaper and radio publicity is expected to draw a large attendance—probably 50,000 people, all interested in owning homes. Federal Housing Administration officials will be present to explain the new Housing Act provisions, and it is hoped that some of our own members can arrange to be on hand at least part of the time daily to explain architectural service. Any architect wishing to exhibit plans should leave them at the Association office before March 22.

With the Architects

SAN FRANCISCO PAROCHIAL SCHOOL

Plans are being completed in the office of Martin J. Rist, Architect, San Francisco, for a three story reinforced concrete parochial school to be erected at Elizabeth and Diamond Streets, San Francisco, for the Archbishop of San Francisco Diocese. There will be nine class rooms, vocational room and cafeteria. Barrett & Hilp will construct the building.

NEW HOSPITAL WING

A four story reinforced concrete and brick veneer addition, consisting of a west wing, is to be built to the Kern County General Hospital, Bakersfield, from plans by Architect Charles H. Biggar. Bids have been taken and are under advisement. The structure, which will cost $50,000, will have a terra cotta tile roof, new automatic passenger elevator, asphalt tile floors, etc.

SAN FRANCISCO APARTMENTS

Sixty thousand dollars will be expended on an eight-story Class "B" steel frame and concrete apartment building for Edward Rolkin on Stockton Street, between Sutter and Bush Streets, San Francisco, from plans by George W. Travis, 604 Mission Street, San Francisco. Norman B. Green is the structural engineer.

SACRAMENTO THEATER

A new theater designed in the modern Grecian style and estimated to cost $150,000 will be constructed at once at 18th and "Y" Streets, Sacramento, for Charles Holtz and Abe Blumenfeld. Construction will be steel and concrete with a 100-foot tower. Robert C. Younger is the architect.

OAKLAND APARTMENT BUILDING

Messrs Miller & Warnecke have completed drawings for a $25,000 two story frame and brick veneer apartment building for an unnamed client at Merritt Street and Brooklyn Avenue, Oakland. Contract is expected to be let this month.

THEATER AND STORE BUILDING

A $60,000 moving picture theater with a seating capacity of 800 is planned for Gridley, Butte County, the architect being R. C. Younger, 25 Taylor Street, San Francisco. Moore & Roberts will be in charge of construction.

WOODSIDE RESIDENCE

Construction was started this month on a new home in Woodside Heights, San Mateo County, for Gilbert Meese of Redwood City. Gardner A. Dailey, 210 Post Street, San Francisco, is the architect of the $11,000 improvement.

LOS ANGELES MERCANTILE BUILDING

Plans are being prepared by Myron Hunt and H. C. Chambers, Continental Building, Los Angeles, for a million dollar improvement to the property of the Capital Company at Wilshire Boulevard and Hampshire Street, Los Angeles. The lesseees are I. Magnin & Company of San Francisco. The building will be five stories with exterior of black granite and white marble. Timothy L. Pflueger, of San Francisco, has been commissioned to design the interior of the building.

$35,000 EUREKA CHURCH

Plans have been completed and construction will start this month on a one-story frame and rustic Episcopal Church at Eureka, Humboldt County. The plans were prepared by Lewis P. Hobart, of San Francisco.

PACKING PLANT ADDITION

A $40,000 addition is to be built to the Miller Packing Company's plant on Second Street, Oakland, from plans by H. C. Baumann, 251 Kearny Street, San Francisco.

ARCHITECT SWARTZ BUSY

New work in the office of Fred L. Swartz, Brix Building, Fresno, includes a city jail in Porterville and residences for D. Stephenson in Madera; M. B. Swanson in Visalia; and Ralph E. Wolf in Lindsay. The first-named house will cost $14,000 and the other two $7,500 each.

OAKLAND CHURCH

A contract has been let for the construction of a $40,000 edifice at Hudson and Manila Streets, Oakland, for the Rockridge United Brethren Society. Harold H. Weeks, San Francisco, is the architect.

HOTEL AND STORE BUILDING

Working drawings are in progress for a two-story frame store and hotel building for Fred Giotinini of Salinas. Guy Koepp of Carmel is the architect. Building will cost $30,000.

TRACY GRAMMAR SCHOOL

A six-classroom grammar school building is to be built at Tracy from plans by Elmore G. Ernst, of Stockton. Brick veneer exterior and maple floors are specified.

NINE ROOM RESIDENCE

T. McEneany, Jr., is the owner of a nine-room house to be built in Claremont Pines, Oakland, from plans by Masten & Hurd, 442 Post Street San Francisco.

BERKELEY RESIDENCE

James W. Plachek has awarded a contract for a seven-room house on Arlington Avenue, Berkeley, for Lem Williams. The estimated cost is $14,000.

PERSONAL

Robert Goss, a graduate in architecture from the California Academy of Fine Arts, San Francisco, class of 1935, has opened an office for general practice in the Elks Temple Building, Bremerton, Washington.

Frederick V. Lockman, architect, who has been particularly active in the field of church design, recently moved his office to a four-room suite at 1517 Dexter Horton Building, Seattle.

Silas E. Nelsen and **Hubert Bisson,** 407 Sheridan Avenue South, Tacoma, recently enjoyed a 12-day trip to California. Sketches were made of the Golden Gate Bridge, the Santa Barbara Courthouse, the Mission of San Juan Capistrano, and seven other notable structures.

Governor **Frank F. Merriam** has appointed **A. M. Edelman** in the Southern District and **Fredrick M. Meyer** in the Northern District to succeed themselves upon the California State Board of Architectural Examiners.

APARTMENTS AND DWELLINGS

Chester H. Treichel, 696 Cleveland Avenue, Oakland, who has recently recovered from an illness, is busy with several important commissions, including four, four-room apartments to cost $16,000 in Oakland; a residence in San Leandro for J. C. Berry, and a residence in Forest Hill, San Francisco, for Mrs. Marian Miller.

CLUBHOUSE ALTERATIONS

A contract has been awarded to G. P. W. Jensen, 320 Market Street, San Francisco, for alterations and additions to the Family Club, 545 Powell Street, San Francisco. A feature of the improvements will be a sun deck. Construction will be wood frame and brick. Miller & Pflueger are the architects.

JUNIOR COLLEGE FOR SALINAS

Extensive additions are planned to the Junior College at Salinas at an estimated cost of $60,000. The new unit will include twelve classrooms, a gymnasium and a cafeteria. Charles E. Butner is the architect and F. W. Kellberg, structural engineer.

SAN JOSE DEPARTMENT STORE

An $80,000 addition is planned by L. Hart & Son to their department store at Market and Santa Clara Streets, San Jose. Edward W. Kress is the architect.

TO REMODEL OFFICE BUILDING

The Ferry-Morse Seed Company is remodeling its San Francisco office building from plans by Architect Frederick H. Meyer, Kohl Building, San Francisco.

With the Engineers

FEBRUARY MEETING OF THE AMERICAN SOCIETY OF CIVIL ENGINEERS

The San Francisco Section, American Society of Civil Engineers, held its monthly meeting Tuesday, February 15, at the Engineers' Club, with a total attendance of 100 members and guests, drawn, no doubt, by the excellent program previously announced.

Towards the end of the dinner former President H. J. Brunnier informally tendered both his officers' and his own thanks for the membership's cooperation during his preceding term. Going on from there, and saying that he believed that some sort of informal inaugural ceremony would be apropos, he introduced Mr. Wadsworth, the Section President for the coming term, who in turn rose, and introduced the officers elected with him.

Following the after-dinner recess, the business meeting was called to order, and President Wadsworth delivered a short "inaugural address," in which he outlined the policies of the Section for the coming term, and sketched the problems brought about by the reallocation of memberships by the parent society. Following the address, the various committee chairmen were called upon for one minute reports on their committee activities.

With formal business disposed of, the program of the meeting, i.e., a "Progress Report" on the Golden Gate International Exposition, was made. First of the speakers was Major McCrystal, of the Exposition's Special Events Department, who gave a lively description of the mechanics of the World's Fair organization, touching briefly on each department's work, but at all times placing emphasis on the more entertaining side of these activities, such as, for instance, the photographing of Sally Rand performing her famous fan dance against a background of partially erected Exposition buildings.

Following Major McCrystal, J. J. Gould, Chief Structural Engineer for the Exposition, gave a resume of the organization and accomplishments of the Fair's Department of Works (printed in full elsewhere in this issue).

The third, and last, speaker was Frank Petersen, Manager of the Exposition's Speakers Bureau. Mr. Petersen pointed out the importance of the publicity work necessary to make such a venture a success, sketched the hoped-for extent of foreign participation, and pointed out the effect that the holding of the Fair would have on the economic status of the Bay region in particular, and of the western states in general. He then closed the evening's activities by showing a very complete and well arranged series of color slides tracing the Exposition's progress from an idea, to its present form, and then on to its final consummation in 1939.

THE PROBLEM OF CONNECTING NEW MATERIAL TO OLD CONCRETE

The following is an abstract of a talk by Charles A. Whilton, chief engineer of the Oakland Public Schools, before the Structural Engineers' Convention of San Francisco:

"Any engineer who is concerned with the reconstruction of California schools to better withstand earthquakes will probably be confronted with the problem of connecting new concrete to old concrete. The problem has many troublesome aspects and, to a varying degree, it will probably be found necessary to use some kind of anchorage built into the old concrete and serving as dowels for the reinforcing rods in the new concrete. To determine how much reliance might be placed on such a type of anchorage and to attempt to find some suitable scheme of reasonable cost, the Department of Architecture and Engineering of the Oakland Public Schools decided to test the strength of plain bolts grouted into old concrete. Such tests have recently been made in collaboration with the Berkeley Public Schools.

"In all, twenty tests were made—two for each type of assemblage. One of each type was tested to failure by a uniformly increasing load, while the second specimen of the group was tested to failure by intermittent loading, that is, by reducing the load to a total load of 1000 pounds at various increments of load until well beyond the apparent elastic limit of the specimen. At least half of the specimens showed more stiffness under intermittent loading than the companion specimen showed under uniformly increasing loads.

"It is realized that, for a thorough investigation of this rather small but interesting subject, several hundred specimens should be tested. These should experiment with different sizes and shapes of bolt, varying depths and sizes of drilled holes in the concrete, and different grout mixtures and methods of placing. Still it appears that the results obtained are surprisingly consistent and lead to some valuable conclusions.

"All specimens failed by a breaking of the bolt and not by pulling out of the hole. This was even true of the bolt grouted with sulphur, which showed so much movement, and also true of the 5/8-inch round deformed bar grouted 19 inches into the hole and grouted for a length of 30 diameters.

[Turn to second column, next page]

LANDSCAPE ARCHITECTS

San Francisco Chapter, A. S. L. A.

President
L. Glenn Hall, San Francisco

Vice President
Helen Van Pelt, San Anselmo

Secretary-Treasurer
Geraldine Knight, San Anselmo

Bright Outlook for 1938

Members of San Francisco Chapter, A. S. L. A., are enthusiastic over the outlook for the year, believing that the Federal Housing Measure will bring a good deal of activity for them. The newly formed Chapter is in splendid condition with membership increasing right along. Commencing with this issue the Chapter will be regularly represented with informative and miscellaneous news matter in The Architect and Engineer, contributions from members being welcome.

Should Exhibit at the Fair

The public would undoubtedly like to see what the profession is doing in landscape architecture at the 1939 Fair, hence the following communication from Professor H. W. Shepherd of the Department of Landscape Architecture, Berkeley, is to the point:

Editor Architect and Engineer:

To date our organization has not been invited to participate in an exhibition at the 1939 Fair. We have recently been invited, however, to participate in the 52nd annual exhibition of the Architects League of New York. It seems strange to me that the 1939 San Francisco Exposition has not seen fit to enlist the active support of such an organization as our own, especially since we have recently taken the name "San Francisco Chapter."

Very truly yours,

H. W. SHEPHERD.

Committees for 1938 Activities

The following committee appointments have been made for 1938 by L. Glenn Hall, President of the Chapter:

CIVIC—Emerson Knight, Chairman, 9 Geary St., San Francisco; Russell L. McKown, 250 Federal Bldg., San Francisco; Arthur Cobbledick, 4179 Park Blvd., Oakland.

EXHIBITION—Butler Sturtevant, Chairman, 210 Post St., San Francisco; Thomas D. Church, 402 Jackson St., San Francisco; Thomas E. Carpenter, 250 Federal Bldg., San Francisco.

MEMBERSHIP—Ernest A. Davidson, Chairman, 250 Federal Bldg., San Francisco; Geraldine Knight, 52 Barber Avenue, San Anselmo; John W. Gregg, 101 Agriculture Hall, Berkeley.

PUBLICITY—H. W. Shepherd, Chairman, 101 Agriculture Hall, Berkeley; Frederick N. Evans, 1341-40th Street, Sacramento; Harold T. Abbott, 621 Hutton Bldg., Spokane, Washington.

PROGRAM—Helen Van Pelt, Chairman, 52 Barber Avenue, San Anselmo; E. Leslie Kiler, 1184 Palo Alto Ave., Palo Alto; Fred H. Schumacher, 331 Giannini Hall, Berkeley.

Landscape Work Under Construction

Mrs. Helen Van Pelt and Miss Geraldine Knight, landscape architects of San Anselmo, report the following work under construction:

Mr. and Mrs. Walter Heller, Owner; Charles K. Sumner, Palo Alto, Architect; House in Rio del Mar Country Club grounds, below Santa Cruz.

Mr. and Mrs. Dudley F. Miller, Owner; Carl F. Gromme; Architect; del Mesa, Kentfield, Marin County.

Mr. and Mrs. Morris P. Frost, Owner; 1 Hill Road—off Grizzly Peak Blvd., Berkeley; Rock Garden on 7-acre place which contains the old Pittock Quarry; Irving Morrow, Architect.

Harry Scott, Owner; Fred K. Schirmer, Architect; Further development of a 30-acre estate, Fairfax.

Mr. Herbert K. Walton, Owner; Sam Heiman, Architect; New development on an 8-acre, very spectacular site overlooking Marin Golf and Country Club and the Bay north of San Rafael.

Mrs. Paul Cohn, Owner; Pacific Avenue, San Francisco; Charles K. Sumner, Architect; Walled garden overlooking Presidio playground.

Mr. and Mrs. Kenneth Bechtel, Owner; Bay View Ave., Belvedere; Remodeling an old terraced garden.

ENGINEERING PROBLEM

[Continued from Column 2, Page 51]

"Any engineer who takes these tests as a guide in his own practice should naturally make his own determination of the total stress which he is willing to put on any individual dowel. The tests seem to show, for the usual working stress of 5000 pounds of a 5/8-inch bolt that the net movement of the anchor is only .01 inch and that this movement is wholly elastic. For this stress increased by one-third to 6600 pounds the net movement is .02 inch and the movement is not far from being wholly elastic. Authorities having to do with the review of the school design are willing to accept the tests as determining the fact that 5/8-inch rivet-headed bolts, fully grouted in 9 inch holes with 1-1 plastic rammed grout, develop the usual working stresses of a 5/8-inch round dowel."

NORTHERN CALIFORNIA CHAPTER, A. I. A.

The regular meeting of the Northern California Chapter, A. I. A., was held at the St. Francis Yacht Club, San Francisco, Tuesday evening, January 25, Warren C. Perry presiding.

Present: Harris C. Allen, Wm. Clement Ambrose, John Knox Ballantine, Jr., E. Geoffrey Bangs, Morris M. Bruce, Birge M. Clark, Henry H. Gutterson, Wayne S. Hertzka, Henry T. Howard, Lester Hurd, Raymond W. Jeans, Ellsworth E. Johnson, Frederick H. Meyer, Harry M. Michelsen, Chester H. Miller, James H. Mitchell, Gwynn Officer, Warren C. Perry, Frederick H. Reimers, Wallace A. Stephen, Roland I. Stringham, Ernest E. Weihe, Wm. Wilson Wurster, John Davis Young.

Guests at the meeting included Bourn Hayne of San Francisco, and Mr. Stevens, a visiting architect from Singapore.

Announcing the approval of the new By-Laws of the Institute, Mr. Perry stated that the Chapter is now entering into a new era in which, it is expected, there will be stimulated growth in its membership and activities.

Pointing to a busy program already inaugurated, he felt that it was desirable to set this meeting apart for open discussion on how the Chapter might better progress. This, it was thought, would greatly assist the officers and the committees to whom very definite work has been assigned in guiding the Chapter into a more effective course.

Each committee was called upon thereafter, to outline its particular assignment and any plans that had been formulated. This was followed by a general discussion of the subject in which many helpful thoughts were advanced.

A brief synopsis lists some of the high points suggested:

Membership

AIM: To increase membership.

SUGGESTED: Urging members to propose eligibles . . . circularizing members for suggested names . . . circularizing held to be infra dignitatem . . . to hold a dinner for eligibles . . . the honor and distinction of membership as an appeal to eligibles.

Public Information

Discussion on how to effect coupling of architects' names with press reports on new buildings.

Practice

AIM: To set up Chapter schedule of fees and simple letter form of contract between architect and client.

To impress upon members the obligation of architect to client and responsibility for keeping work within the limit of available funds.

To render better service.

SUGGESTED: Importance of harmonious relationship between architect and draftsmen . . . necessary for architects to assume the lead otherwise draftsmen may take measures for their own benefit . . . closer relationship between the Chapter and State Association under leadership of Chapter.

Relations with Construction Industry

RECITED: Past relations with Building Industry Conference Board and with Producers' Council.

SUGGESTED: Close working [illegible] with Producers' Council in unison with State Association.

Public Relations

AIM: Securing public work for architects [illegible]

RECITED: Recent meeting with Engineers with reference to situation in California that limit. public work to be performed under civil service . . . conclusion that it would require [illegible] effort to repeal constitutional amendment by which engineers delegates of respective organizations to form study group to see what can be done.

Allied Arts

REPORTED: Committee giving study to program.

Large Scale Housing

AIM: To cooperate with Institute program.

REPORTED: Little can be done in this State until enabling act is passed.

Moved by Mr. Allen and carried that the Chapter send a letter to the Governor impressing upon him the need to include this legislation at the next session of the Legislature.

Small Scale Housing

REPORTED: Committee giving study to the problem and determining scope of program to follow.

MEMBER COMMENTS: On handicaps in connection with small house work.

SUGGESTED: Chapter cooperation in connection with small home exhibit being promoted by the Building Material Exhibit.

Civic Design

REPORTED: Committee giving study to program.

Exhibit Committee

REPORTED: Progress in plans for Honor Award Exhibit, authorized in November meeting.

A motion by Mr. Weihe was carried, referring to the Executive Committee for decision in the matter of temporary continuance of subscription of funds to the Architects' Home Building Service.

A motion by Mr. Wurster, seconded by Mr. Weihe, was carried, to endorse the resolution of New York Chapter with reference to competitions for public work.

With the announcement of their approval by the Institute, the new By-Laws were declared to be in effect and operative.—J. H. M.

HONOR CERTIFICATES DISTRIBUTED

February meeting of Southern California Chapter, A. I. A., was devoted largely to presentation of certificates to architects and owners whose houses and gardens were given honor awards by a jury consisting of Clarence A. Tantau of San Francisco, John F. Murphy of Santa Barbara and H. J. Powell of Los Angeles.

Eugene Weston, Jr., the new president of the Chapter, presided and the certificates were presented by Gordon B. Kaufmann. Among the distinguished owners to be honored was Amelita Galli-Curci, whose house was designed by Wallace Neff with Florence Yoch and Lucille Council as landscape architects.

Thirty-eight houses, gardens and examples of allied arts were given honor awards, while 25 special mentions were made, the selections having been made from a list of 115 entries.

During 1938 the Chapter will appoint a jury to select examples of good architecture in buildings other than residential, to be awarded honor certificates early in 1939.

Among guests attending the meeting were D. Everett Waid, past president of the American Institute of Architects, and Miss Althea Warren, Los Angeles city librarian.

Delegates to the 1938 convention of the Institute, to be held in New Orleans, Louisiana, this spring, were nominated. They are: Eugene Weston, Jr., Edgar Bissantz, George J. Adams, H. C. Chambers, A. M. Edelman, William H. Harrison, Earl T. Heitschmidt, Harbin Hunter, Gordon B. Kaufmann, Samuel E. Lunden, S. B. Marston, Herbert J. Powell, Sumner Spaulding, Carleton M. Winslow and A. C. Zimmerman.

WASHINGTON A. I. A. CHAPTER

The 43rd annual meeting of the Washington State Chapter, A. I. A., was held Saturday, January 22, at the Olympic Hotel, Seattle. The morning session, an educational conference in Parlor "B," included work of the Seattle high schools presented by Ernest Osgood, John Mattson, F. Q. Gorton, Willis Leaks, H. W. Mulhollan and C. E. Claus. Prof. Harlan Thomas, School of Architecture, U. of W., talked on "Architectural Education."

During the noon hour Tacoma architects provided entertainment under the direction of Charles T. Pearson.

Election of officers and addresses by William H. Crowell of Portland, regional director, and Prof. W. R. B. Willcox, School of Architecture, University of Oregon, Eugene, dominated the afternoon business session in Parlor "B." Professor Willcox gave his talk on "Taxation Affects Architecture."

The new officers are: President, B. Marcus Priteca, Seattle; 1st Vice-President, F. A. Naramore, Seattle; 2nd Vice-President, Ernest T. Mock, Tacoma; 3rd Vice-President, Henry C. Bertelsen, Spokane; Secretary, Victor N. B. Jones, Seattle; Treasurer, Clyde Grainger, Seattle; member of executive board for 3-year term, William J. Bain, Seattle.

Features of the annual dinner included addresses by the retiring president, Lance E. Gowen, and Mr. Priteca. J. Lister Holmes conducted an introduction and welcome to advancing members. Professor Willcox spoke on "Conditions in the Profession." The evening was concluded by a performance of "Snow White and the Seven Dwarfs" by University students.

WASHINGTON ARCHITECTS SOCIETY

Twenty members of the Washington State Society of Architects took part in the discussion of the building labor problem at the monthly meeting February 10. It was felt that building labor wages were too high in comparison with the incomes of other economic groups which provide the market for housing. President James M. Taylor, Jr., presided.

A. I. A. CONVENTION NEXT MONTH

MORE than 600 architects are expected to attend the seventieth convention of the American Institute of Architects in New Orleans April 19 to 22.

Moise H. Goldstein of New Orleans, regional director of the Institute for the Gulf States District, has been appointed chairman of the convention committee of the Institute, which will cooperate with a committee of the New Orleans Chapter, of which F. Julius Dreyfous is president, in arranging the program of events. Delegates from the Institute's seventy chapters, including many of the nation's leading architects, will attend.

Housing will be a chief theme of the session, at which scores of reports and addresses dealing with practically every phase of architecture and construction will be presented. The report of the Institute's Housing Committee will be made by the chairman, Walter R. McCornack of Cleveland. The report will describe the development of a 1938 program which the Institute is fostering with the aid of other groups in the building industry.

Steps are being taken to place a consulting architect on the technical staff of every local housing authority set up under the Wagner-Steagall Act, Mr. McCornack says in outlining the plans of organized architecture, which will take shape at the New Orleans assembly.

"In spite of the difficulties in the way of any considerable accomplishment in the housing field at the moment, there can be no doubt that the profession is facing an opportunity the scope of which is not yet fully realized," he explains. "Meanwhile there are certain obvious things to be done which have a direct bearing on the architects' effective participation in a future program. There is an increasing realization on the part of housing authorities of the value of architectural advice during the development work.

"Consequently the Committee on Housing suggests that in the creation of local housing authorities, Chapters recommend that an architect be appointed as a member of the authority. The Housing Committee has already recommended to the United States Housing Authority that the technical staff of each local authority include a consulting architect.

"While the acceptance of these positions by architects would disqualify them from acting as architects of any of the projects, it would be a sacrifice worth undertaking for the good of the profession and of housing."

A radical reduction of charges and costs is essential to a solution of the problem of the low-cost home, according to the architects, whose objectives are summarized as follows:

Revision of building codes, elimination of price fixing at exhorbitant levels, outlawing of jurisdictional disputes, expulsion of racketeers from industry, permission to use new methods of construction which will reduce costs, elimination of unnecessary middlemen, purchase of land at its use value, revision of taxation methods and lowering the interest rates.

MODERNIZED PRODUCTS

Brief Notes on New Materials and Equipment in the Building Industry.

1. CABLE

Anaconda Wire and Cable Company announces a new product, "Anaconda Parkway cable," in a brochure which gives details such as descriptions, applications, electrical and physical properties, as well as current carrying capacities. A note to The Architect and Engineer will bring you further information.

2. STAINLESS STEEL

Ludlite, a new product recently put out by the Ludlum Steel Company. The material is a lightweight, stainless steel, adapted to the use of the builder of homes, hotels, apartments and public buildings. Mark the coupon if interested and receive further details.

3-4. LIGHT

Light Conditioning—The Modern Way to Easier Seeing—is the title of a very interesting booklet issued by Pacific Coast Electrical Bureau. This bureau has also recently issued another piece of interesting data — Luxury Lighting—both these booklets may be had by indicating your preference on the coupon.

5. ELECTRICITY

Ward Leonard Electric Company has just issued information relative to their Sensitive Relays for Direct and Alternating current. Diagrams and descriptions of the various phases of this product can be had by marking the coupon and sending to The Architect and Engineer.

6. FOR DRAFTSMEN

A very interesting and useful little booklet has been issued by Keuffel and Esser Company. This should interest draftsmen and architects as well as engineers as it gives specific information relative to Graph Sheets, Coordinate papers and cloths. Mark the coupon for your copy.

7. PLYWOOD

The Douglas Fir Plywood Association has issued a brochure telling the reasons why concrete forms should be made of their plywood. Graphically illustrated and well written, this brochure should prove of interest to the building profession. Ask The Architect and Engineer about this by marking the coupon.

8. REFLECTORS

Permaflector News is the title of a little paper put out by The Pittsburgh Reflector Company. In the interest of better lighting, it has an excellent story to tell. Send for your copy by number on the coupon.

9. HARDWOOD

The American Walnut Manufacturers Association is expanding and announces its new program through some interesting news releases. Further information regarding this important association can be had by addressing The Architect and Engineer.

10. AIR CONDITIONING

Independent Air Filter Company's newest product, an air conditioning unit known as "Kompak-Model C" is illustrated in an attractive brochure, giving the mechanical details as well as installation procedure. The coupon properly marked will bring prompt delivery of literature dealing with this equipment.

11. INSULATION

The Celotex Corporation publishes a most interesting "newspaper" which they call "The Celotex News." Manufacturing and sales news and the other various activities of this company are well written up. The little paper is illustrated. Send in the coupon and receive copies for your files.

12. HUMIDITY CONTROL

Hygrometers for recording and controlling humidity are featured in a new brochure issued by the Brown Instrument Company. This is one of the most interesting pieces of literature that has come to our attention in some time. Write to The Architect and Engineer for further details.

13. HOUSING

The Home Idea Book is the title of a splendidly gotten-up booklet dealing with remodeling, maintenance, decoration and building of homes. Illustrations are clear and well placed. This booklet is just issued by Johns-Manville. Send for your copy by clipping the coupon.

14. MORE HOUSING

The prize of all this month's booklets must really go to that one issued by the American Rolling Mill Company, entitled "Should Husbands Keep House." A very pertinent little booklet and one filled with choice hints and illustrated to match. The coupon will bring you a copy and you had better send it soon for we are sure the supply will not last long.

15. REFRIGERATION

Westinghouse has issued two small folders entitled "Table Talk" and "Cold Cooking." They deal respectively with Superoven and Refrigerators, Westinghouse equipment. There are some attractive recipes included in these folders which should intrigue the housewife. Let us have your coupon and we will see that you have your copies in due time.

FREE FOR THE ASKING

Check items on coupon, paste on letter head or postal card, and mail to Architect and Engineer.

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The national housing movement, the small house problem, land utilization, the relations of labor and industry to housing, minimum standards of dwelling units, and city planning will be discussed at meetings in New Orleans sponsored by the Housing Committee.

Progress in many other fields of architecture and building will be reported. Allied arts, public works, building, education, structural service, public information, preservation of historic buildings, registration laws, civic design, foreign relations, construction industry relations, the professional organization of architects, and the development of the National Capital are among the topics for discussion.

The Government housing program is of profound economic and social significance, Mr. Maginnis declares in a statement pointing out that the skill and imagination of the architects are indispensable to its success.

"The architectural profession of America, conscious of its obvious responsibility for the success of this great construction policy, has pledged the Government its earnest collaboration," Mr. Maginnis says.

The New Orleans Chapter is arranging tours of historic places in and around New Orleans. Numerous other local events are being planned by committees of this Chapter. The headquarters of the meeting will be at the Hotel Roosevelt. The last convention of the Institute to be held in New Orleans was in 1913.

STATE MAY PURCHASE FERRIES

Success of the San Francisco Bay Bridge is a matter in which the entire State of California is interested, Governor Frank F. Merriam asserted at a meeting of the California Toll Bridge Authority held in Sacramento to approve of a plan of refinancing the San Francisco-Oakland Bay Bridge at a lower rate of interest granted by the Reconstruction Finance Corporation.

Discussions of the proposed refinancing at public sessions of the Toll Bridge Authority have involved the suggestion that the Authority eliminate competition with the San Francisco-Oakland Bay Bridge by the purchase of the Southern Pacific-Golden Gate passenger ferries now operating between San Francisco and the East Bay cities.

Governor Merriam has directed the Authority to submit the question of the purchase of the ferries to the boards of supervisors of San Francisco and Alameda counties and the city councils of Oakland, Berkeley, Alameda and other East Bay communities.

Test Rigidity Of Buildings In Relation To Their Earthquake Resistance

Professor L. S. Jacobsen, of the Stanford School of Engineering, was host to 80 members and friends of the Structural Engineers Association of Northern California, who held their regular monthly meeting at Palo Alto on March 1. After a dinner at the Hotel President, the group assembled in the Mechanics Laboratory of the University and witnessed vibration demonstrations to study the effects of earthquake phenomena on characteristic building models. Foremost among these was an idealized model of a 16-story San Francisco office building, which was used for the demonstrations. These were supplemented with discussions of a series of similar tests made over a period of years.

Several years ago a series of tests was started at Stanford University which attempted to investigate, among other things, the general trend of behavior of certain buildings under earthquake forces. In order to do this, an extremely simplified model was made of a certain San Francisco office building. The rigidity of the first floor of the model was made adjustable to investigate several general types of design. This model was then subjected to "ground" shocks of various types and the deflections at numerous points observed. By using these deflections, combined with the physical properties of the model, indications of the relative shears in the prototype under various conditions could be obtained.

As the tests are as yet incomplete, Professor Jacobsen refused to draw any specific conclusions at the present time. The results presented, however, seemed to indicate that the shears in a flexible building were decidedly smaller than those in a more rigid structure for all frequencies of shocks investigated.

The address was well received by the listeners, who entered wholeheartedly into a discussion of various phases of the problem. The Structural Engineers of California can be justly proud of the fact that they have been pioneers in the investigation of rigidity of buildings in relation to their earthquake resistance.

In The Architect and Engineer of March, 1927, L. H. Nishkian published a paper describing the use and advantage of a flexible structure in an example which had come to his attention. This was followed by spirited discussions between the proponents of "rigid" versus "flexible" construction. The address and demonstration of Professor Jacobsen was very timely and his investigations, when completed, will obviously be a valuable authoritative contribution to the present science of structural design for resistance to lateral forces.

Estimator's Guide

Giving Cost of Building Materials, Wage Scale, Etc.

Amounts given are figuring prices and are made up from average quotations furnished by material houses to San Francisco contractors. 3% Sales Tax on all materials but not labor.

All prices and wages quoted are for San Francisco and the Bay District. There may be slight fluctuation of prices in the interior and southern part of the state. Freight cartage, at least, must be added in figuring country work.

Bond—1½% amount of contract.

Brickwork—

Common, $40 to $45 per 1000 laid, (according to class of work).

Face, $100 to $110 per 1000 laid, (according to class of work).

Brick Steps, using pressed brick, $1.25 lin. ft.

Brick Veneer on frame buildings, $ .75 sq. ft.

Common f.o.b. cars, $14.00 at yard. Cartage extra.

Face, f.o.b. cars, $45.00 to $50.00 per 1000, carload lots.

HOLLOW TILE FIREPROOFING (f.o.b. job)

3x12x12 in.	$ 84.00 per M
4x12x12 in.	94.50 per M
6x12x12 in.	126.00 per M
8x12x12 in.	225.00 per M

HOLLOW BUILDING TILE (f.o.b. job) carload lots.

8x12x5½	$ 94.50
6x12x5½	73.50

Building Paper—

1 ply per 1000 ft. roll	$3.50
2 ply per 1000 ft. roll	5.00
3 ply per 1000 ft. roll	6.25
Brownskin, 500 ft. roll	4.50
Brownskin, Pro-tect-o-mat, 100 ft. roll	9.00
Sisalkraft, 500 ft. roll	5.00
Sash cord com. No. 7	$1.20 per 100 ft
Sash cord com. No. 8	1.50 per 100 ft
Sash cord spot No. 7	1.90 per 100 ft
Sash cord spot No. 8	2.25 per 100 ft

Sash weights cast iron, $50.00 ton.
Nails, $3.50 base.
Sash weights, $45 per ton.

Concrete Work (material at San Francisco bunkers)—Quotations below 2000 lbs. to the ton. $2.00 delivered.

No. 3 rock, at bunkers	$1.45 per ton
No. 4 rock, at bunkers	1.45 per ton
Elliott top gravel, at bunkers	2.10 per ton
Washed gravel, at bunkers	1.45 per ton
Elliott top gravel, at bunkers	2.10 per ton
City gravel, at bunkers	1.45 per ton
River sand, at bunkers	1.40 per ton
Delivered bank sand	1.00 cu. yd.

Note—Above prices are subject to discount of 2% per ton on invoices paid on or before the 10th of month, following delivery.

SAND

Del Monte, $1.75 to $3.00 per ton.
Fan Shell Beach (car lots, f.o.b. Lake Majella), $2.75 to $4.00 per ton.

Cement (paper sacks) $3.00 bbl., warehouse or delivery.
Car-load lots delivered $2.70, f.o.b. cars $2.52
(Cloth sacks) $3.00 bbl..
Rebate 10 cents bbl. cash in 15 days.

Atlas White, Calaveras White, Medusa White: 1 to 100 sacks, $1.50 sack, warehouse or delivery; over 100 sacks, $1.25; 2% discount 10th of month.

Forms, Labors average $40.00 per M.
Average cost of concrete in place, exclusive of forms, 35c per cu. ft.; with forms, 60c.
4-inch concrete basement floor ..... 12½c to 14c per sq. ft.
Rat-proofing 7½c
Concrete Steps ..... $1.25 per lin. ft.

Dampproofing and Waterproofing—

Two-coat work, 20c per yard.
Membrane waterproofing—4 layers of saturated felt, $4.50 per square.
Hot coating work, $1.80 per square.
Medusa Waterproofing, 15c per lb., San Francisco Warehouse.
Tricocel waterproofing.

Electric Wiring—$12.00 to $15.00 per outlet for conduit work (including switches). Knob and tube average $3.50 per outlet.

Elevators—

Prices vary according to capacity, speed and type. Consult elevator companies. Average cost of installing an automatic elevator in four-story building, $2800; direct automatic, about $2700.

Excavation—

Sand, 60 cents; clay or shale $1 per yard.
Teams, $12.00 per day.
Trucks, $22 to $27.50 per day.
Above figures are an average without water. Steam shovel work in large quantities, less; hard material, such as rock, will run considerably more.

Fire Escapes—

Ten-foot galvanized iron balcony, with stairs, $115 installed on new buildings; $140 on old buildings.

Floors—

Composition Floors—22c to 40c per sq. ft. In large quantities, 16c per sq. ft. laid.
Mosaic Floors—80c per sq. ft.
Duraflex Floor—23c to 30c sq. ft.
Rubber Tile—50c to 75c per sq. ft.
Terazzo Floors—45c to 60c per sq. ft.
Terazzo Steps—$1.60 lin. ft.

Hardwood Flooring (delivered to building)—

¾x2¼" T & G Maple	$ 88.00 M ft.
1 1/16x2¼" T & G Maple	115.00 M ft.
7/8x3½" sq. edge Maple	100.00 M ft.

	1 1/16x2¼" T & G	¾x2" T & G	1⅛x2" S 2 Edg.
Clr. Qtd. Oak	$120.00 M	$ 82.50 M	$110 M
Sel. Qtd. Oak	99.00 M	69.50 M	84 M
Clr. Pla. Oak	106.00 M	74.50 M	86 M
Sel. Pla. Oak	97.00 M	67.50 M	76 M
Clear Maple	111.00 M	100.00 M	
Laying & Finishing	14c ft	12 ft	10c ft.

Wage—Floor layers, $10.00.
Note—Above quotations are at board measure except last column which is sq. ft

Glass (consult with manufacturers)—

Double strength window glass, 20c per square foot.
Quartz Lite, 50c per square foot.
Plate 75c per square foot (unglazed) in place, $1.00.
Art, $1.00 up per square foot.
Wire (for skylights), 40c per sq. foot.
Obscure glass, 30c square foot.
Glass bricks, $2.40 per sq. ft., in place.
Note—If not stipulated add extra for setting.

Heating—

Average, $1.90 per sq. ft. of radiation, according to conditions.
Warm air (gravity) average $40 per register.
Forced air, average $60 per register.

Iron—Cost of ornamental iron, cast iron etc., depends on designs.

Lumber (prices delivered to bldg. site).

No. 1 common	$29.00 per M
No. 2 common	27.00 per M
Select O. P. common	34.00 per M
2x4 No. 3 farm lumber	26.00 per M
1x4 No. 2 flooring VG	55.00 per M
1x4 No. 3 flooring VG	47.00 per M
1x6 No. 2 flooring VG	60.00 per M
1¼x4 and 6, No. 2 flooring	60.00 per M

Slash grain—

1x4 No. 2 flooring	$43.00 per M
1x4 No. 3 flooring	40.00 per M
No. 1 common run T. & G.	30.00 per M
Lath	5.25 per M

Shingles (add cartage to price quoted)—

Redwood, No. 1	$1.10 per bdle.
Redwood, No. 2	.90 per bdle.
Red Cedar	1.10 per bdle.

Millwork—Standard.

O. P. $85.00 per 1000. R. W., $90.00 per 1000 (delivered).
Double hung box window frames, average with trim, $6.50 and up, each.
Doors, including trim (single panel, 1¾ in. Oregon pine) $8.00 and up, each.
Doors, including trim (five panel 1⅜ in. Oregon pine) $6.00 each.
Screen doors, $3.50 each.
Patent screen windows, 25c a sq. ft.
Cases for kitchen pantries seven ft. high per lineal ft., $8.00 each.
Dining room cases, $8.00 per lineal foot.
Labor—Rough carpentry, warehouse heavy framing (average), $17.50 per M.
For smaller work average, $35.00 to $45.00 per 1000.

Marble—(See Dealers)

Painting—

Two-coat work	35c per yard
Three-coat work	45c per yard
Cold Water Painting	12c per yard
Whitewashing	4c per yard

Turpentine, 65c per gal., in 5 gal. cans, and 55c per gal. in drums.
Raw Linseed Oil—95c gal. in bbls.
Boiled Linseed Oil—95c gal. in bbls.
Medusa Portland Cement Paint, 20c per lb.

Dutch Boy or Pioneer White Lead in Oil (in steel kegs).

	Per Lb.
1 ton lots, 100 lbs. net weight	11 3/4c
500 lbs. and less than 1 ton lots	12c
Less than 500 lb. lots	12 1/2c

Dutch Boy Dry Red Lead and Litharge (in steel kegs).

1 ton lots, 100 lb. kegs, net wt.	11 3/4c
500 lbs. and less than 1 ton lots	12c
Less than 500 lb. lots	12 1/2c

Red Lead in Oil (in steel kegs)

1 ton lots, 100 lb. kegs, net wt.	12 1/4c
500 lb. and less than 1 ton lots	12 1/2c
Less than 500 lb. lots	13c

Note—Accessibility and conditions cause some variance in costs.

Patent Chimneys—

6-inch	$1.25 lineal foot
8-inch	1.75 lineal foot
10-inch	2.25 lineal foot
12-inch	3.00 lineal foot

Plastering—Interior—

	Yard
1 coat, brown mortar only, wood lath	$0.75
2 coats, lime mortar hard finish, wood lath	.80
2 coats, hard wall plaster, wood lath	.85
3 coats, metal lath and plaster	1.30
Keene cement on metal lath	1.30
Ceilings with 3/4 hot roll channels metal lath	.75
Ceilings with 3/4 hot roll channels metal lath plastered	1.50
Single partition 3/4 channel lath 1 side	.85
Single partition 3/4 channel lath 2 sides 2 inches thick	1.50
4-inch double partition 3/4 channel lath 2 sides	1.30
4-inch double partition 3/4 channel lath 2 sides plastered	3.00

Plastering—Exterior— Yard

2 coats cement finish, brick or concrete wall	$1.00
2 coats Calaveras cement, brick or concrete wall	1.35
3 coats cement finish, No. 18 gauge wire mesh	1.50
3 coats Calaveras finish, No. 18 gauge wire mesh	1.75
Wood lath, $7.50 to $8.00 per 1000.	
2.5-lb. metal lath (dipped)	.17
2.5-lb. metal lath (galvanized)	.20
3.4-lb. metal lath (dipped)	.22
3.4-lb. metal lath (galvanized)	.28

3/4-inch hot roll channels, $72 per ton.
Finish plaster, $18.90 ton; in paper sacks.
Dealer's commission, $1.00 off above quotations. $13.85 (rebate 10c sack).
Lime, f.o.b. warehouse, $2.25 bbl.; cars, $2.15
Lime, bulk (ton 2000 lbs.), $16.00 ton.
Wall Board 5 ply, $50.00 per M.
Hydrate Lime, $19.50 ton.

Plasterers Wage Scale	$1.25 per hour
Lathers Wage Scale	1.25 per hour
Hod Carriers Wage Scale	1.10 per hour

Composition Stucco—$1.80 to $2.00 sq. yard (applied).

Plumbing—
From $70.00 per fixture up, according to grade, quantity and runs.

Roofing—
"Standard" tar and gravel, $6.50 per sq. for 30 sqs. or over.
Less than 30 sqs. $7.00 per sq.
Tile, $20.00 to $35.00 per square.
Redwood Shingles, $8.00 per square in place.
Copper, $16.50 to $18.00 per sq. in place.
Cedar Shingles, $9.00 sq. in place.
Recoat, with Gravel, $3.00 per sq.
Asbestos Shingles, $15 to $25 per sq. laid.
Slate, from $25.00 to $60.00 per sq. laid according to color and thickness.

Sheet Metal—
Windows—Metal, $1.75 a sq. foot.
Fire doors (average), including hardware $1.75 per sq. ft.

Skylights—(not glazed)
Copper, 90c sq. ft. (flat).
Galvanized iron, 30c sq. ft. (flat).
Vented hip skylights 60c sq. ft.

Steel—Structural
$120 ton (erected), this quotation is an average for comparatively small quantities. Light truss work higher. Plain beams and column work in large quantities $90 to $100 per ton.

Steel Reinforcing—
$80.00 to $120.00 per ton, set.

Stone—
Granite, average, $6.50 cu. foot in place
Sandstone, average Blue, $4.00, Boise $3.00 sq. ft. in place.
Indiana Limestone, $2.80 per sq. ft. in place.

Store Fronts—
Copper sash bars for store fronts, corner center and around sides, will average 75c per lineal foot.
Note—Consult with agents.

Tile—Floor, Wainscot, etc.—(See Dealers)
Asphalt Tile—18c to 28c per sq. ft. installed.

Venetian Blinds—
40c per square foot and up. Installation extra.

THE BUILDERS' EXCHANGE OF SAN FRANCISCO STANDARD WAGE SCALE

For mechanics employed on construction work in the Bay Region. Effective September 1, 1937

CRAFT	Journeymen Mechanics
Asbestos Workers	$ 8.00
Bricklayers (6h-5d)	10.50
Bricklayers' Hodcarriers (6h-5d)	6.75
Cabinet Workers (Outside) (5d)	8.00
Caisson Workers (Open)	6.40
Carpenters (8h-5d)	10.00
Cement Finishers (8h-5d)	10.00
Cork Insulation Workers (8h-5d)	9.00
Electric Workers (8h-5d)	11.00
Electrical Fixture Hangers	8.00
Elevator Constructors	10.40
Engineers, Portable & Hoisting	9.00
Glass Workers (8h-5d)	9.68
Hardwood Floormen	9.00
Housesmiths, Architectural Iron (Shop) (8h-5d)	9.00
Housesmiths, Architectural Iron (Outside) (8h-5d)	10.00
Housesmiths, Reinforced Concrete or Rodmen (8h-5d)	10.00
Iron Workers (Bridge and Structural) Including Engineers (8h-5d)	12.00
Laborers, Building (8h-5d)	$ 6.00
Laborers, Common (8h-5d)	6.00
Lathers, Channel Iron (6h-5d)	9.00
Lathers, All Others	9.00
Marble Setters (8h-5d)	10.50
Marble Setters' Helpers (8h-5d)	5.00
Millwrights	9.00
Model Makers ($1.50 per hr-6h)	9.00
Modelers ($2 per hr-6h)	12.00
Model Casters	7.20
Mosaic and Terrazzo Workers (Outside)	9.00
Painters (7h-5d)	8.50
Painters, Varnishers and Polishers (Outside)	9.00
Pile Drivers and Wharf Builders	9.00
File Drivers' Engineers	10.00
Plasterers (6h-5d)	10.00
Plasterers' Hodcarriers (6h-5d)	7.50
Plumbers (8h-5d)	11.00
Roofers, Composition (8h-5d)	9.00
Roofers, All Others (8h-5d)	8.00
Sheet Metal Workers (8h-5d)	10.00
Sprinkler Fitters	10.00
Steam Fitters (8h-5d)	$11.00
Stair Builders (8h-5d)	9.00
Stone Cutters, Soft and Granite (8h-5d)	8.00
Stone Setters, Soft and Granite	12.00
Stone Derrickmen	9.00
Tile Setters (8h-5d)	11.00
Tile Setters' Helpers (8h-5d)	6.50
Tile, Cork and Rubber (8h-5d)	9.00
Welders, Structural Steel Frame on Buildings	11.00
Welders, All Others on Buildings	9.00
Dump Truck Drivers, 2 yards or less	6.00
Dump Truck Drivers, 3 yards	6.50
Dump Truck Drivers, 4 yards	7.00
Dump Truck Drivers, 5 yards	7.00
Dump Truck Drivers, 6 yards	7.50
Truck Drivers of Concrete Mixer Trucks:	
2 yards or less	6.50
3 yards	7.00
4 yards	7.50
5 yards	7.50
6 yards	8.00

GENERAL WORKING CONDITIONS

1. Eight hours shall constitute a day's work for all crafts except as otherwise noted.
2. Plasterers' Hodcarriers, Bricklayers' Hodcarriers, Roofers' Laborers, and Engineers, Portable and Hoisting, shall start 15 minutes before other workmen, both at morning and at noon.
3. Five days, consisting of not more than eight hours a day, on Monday to Friday inclusive, shall constitute a week's work.
4. Transportation costs in excess of twenty-five cents each way shall be paid by the contractor.
5. Overtime shall be paid as follows: For the first four hours after the first eight hours, time and one-half. All time thereafter shall be paid double time. Saturdays (except Laborers), Sundays and holidays, from 12 midnight of the preceding day, shall be paid double time.
6. On Saturday, Laborers shall be paid straight time for an eight-hour day.
7. Where two shifts are worked in any twenty-four hours, shift time shall be straight time. Where three shifts are worked, eight hour's pay shall be paid for seven hours on the second and third shifts, allowing one-half hour for lunch.
8. All work, except as noted in paragraph 9, shall be performed between the hours of 8 a.m. and 5 p.m.
9. In emergencies, or where premises cannot be vacated until the close of business, men then reporting for work shall work at straight time. Any work performed on such jobs after midnight shall be paid time and one-half up to four hours of overtime and double time thereafter, provided, that if a new crew is employed on Saturdays, Sundays or holidays which has not worked during the five preceding days, such crew shall be paid time and one-half.
10. Recognized holidays to be: New Year's Day, Decoration Day, Fourth of July, Labor Day, Admission Day, Thanksgiving Day, Christmas Day.
11. Men ordered to report for work, for whom no employment is provided, shall be entitled to two hours' pay.

ENGINEERS EXAMINATION DATES

Written examinations for registration as a civil engineer; for authority to use the title "Structural Engineer"; and for a license as a land surveyor will be held on April 14 and 15, 1938 in Los Angeles and San Francisco, according to an announcement by the State Board of Registration for Civil Engineers, through H. M. Jones, secretary.

RALPH REED IS REAPPOINTED

Mr. Ralph J. Reed, M. Am. Soc. C. E., was reappointed January 27, 1938 by Governor Merriam as a member of the State Board of Registration for Civil Engineers. Mr. Reed has served both as Vice-President and President of the Board.

W. E. KEMERY

William Ellsworth Kemery, Jr., 35, associated with A. E. Doyle, Pacific Building, Portland, died recently after a brief illness. Born at Parkersburg, West Virginia, November 24, 1902, Mr. Kemery was a 1925 graduate of the Carnegie Institute of Technology at Pittsburgh.

Mr. Kemery was a member of the American Society of Civil Engineers and of the American Society of Heating and Ventilating Engineers.

RICHMOND HOUSING PROJECT

The proposed Federal housing development in the Pullman Tract, Richmond, will be featured in next month's issue of The Architect and Engineer. Edwin Snyder, architect, will describe the project and illustrations will show some of Mr. Snyder's drawings of houses planned in connection with the development.

DRIVE-IN MARKET

The Lurie Company is building a drive-in market for Lucky Stores on East Fourteenth Street, Oakland. W. D. Peugh, San Francisco, is the architect.

BERKELEY RESIDENCE

On Cordornices Street, Berkeley, Mrs. D. S. Sheldon will build a $12,000 house from plans by Architect Henry H. Gutterson.

OAKLAND RESIDENCE

Miller & Warnecke have designed a $15,000 house to be built in Claremont Pines, Oakland, for George C. Graff, Longridge Road, Oakland.

C. J. RYLAND BUSY

New work in the office of C. J. Ryland of Monterey includes a $12,000 residence in Carmel and a $10,000 home in Santa Cruz.

RADIANT RAYS

A WESIX "FORTY-NINER" BUILT-IN HEATER ASSURES COMFORT FOR THIS EARLY MORNING SHAVER

As a timely tie-in with the new Federal Housing program, two new built-in bathroom heaters have just been announced by Wesix Electric Heater Company, world's largest manufacturers of electric heaters.

The new Wesix "Bilt-In," 20 inches high, is a compact heater designed to give instant heat and luxurious bathroom comfort to the average size home, price $14.95.

Pictured is the Wesix "Forty-Niner," 49 inches of built-in heater that disperses a bountiful supply of radiant rays, traveling at the speed of light. It rapidly circulates warm air by natural means through the entire room, price $21.50.

Here are two timely new products. Hundreds of thousands of low cost new homes will be built through the new Federal Housing Act, creating a rich market for these two new Wesix built-in bathroom heaters.

BUSINESS GOOD

Columbia Steel Company has this month placed four additional open hearth furnaces in operation, according to Ambrose N. Diehl, president.

Three of the furnaces are at the Torrance, California, plant of the company, and mark the resumption of ingot production in this plant for the first time since last December. The fourth furnace will be added to the operations of the plant at Pittsburg, California.

President Diehl said a more favorable forecast for the company's operations made the step up of ingot production advisable.

FAIR TRADE PRACTICES

by Peirson M. Hall*

I APPRECIATE the high compliment you pay me. You have invited a lawyer and a political candidate to talk to you on "Fair Trade Practices." Lawyers and politicians are consulted by people who are actuated by various motives. Some seek advice to avoid their responsibilities. Others seek it on the principle that "he is thrice armed whose cause is just" and therefore want an advocate whose "strength is as the strength of ten because his heart is pure."

The topic of discussion shows, I know, that I am invited to speak before you from the latter motive.

I like to console myself with the thought that America is growing better. Somehow the maxims of an earlier day on which the hard-headed business man was wont to pride himself, ring false today:—

"All is fair in love and war," said the poet.
"Let the buyer beware," said the lawyer.

We now know that the well-ordered satisfactory life can not be sustained on such principles of barbarian ethics. All is NOT fair in love or war and, instead of telling the buyer to beware, we have numerous regulations to protect buyers from unscrupulous sellers. And most important of all, we are getting a group consciousness among the sellers that their own best interests are dependent upon the buyers' best interests. . . .

"Fair trade practices" sound simple, but they are difficult to obtain. The essence of the phrase is simple to understand.

There are five elements to fair trade regulations:

FIRST, you must have the proper law.

SECOND, you must have officials of quality and character with a true desire to enforce that law.

THIRD, you must have continuing appropriation to provide adequate machinery to promptly enforce the law.

FOURTH, you must have a true desire and effort by the majority of those affected, to deal fairly.

FIFTH, the problems, troubles, the concerns, the income and the general well-being of those engaged and employed in other non-competitive business and production must be considered. The last decade has emphasized all of these, but particularly the last one.

Lacking any of these a program of fair trade practices is bound to fail.

Of course a "law" or legal measuring stick is necessary, but those who are interested in securing fair trade practices must always be on guard against the tricks of those who would seem to favor fair trade practices, but by innocuous-appearing amendments, sometimes even to the point of punctuation while a law is in the course of passage, destroy its effectiveness.

The Cartwright Act of California has been on the statute books many years but, due to one simple-appearing sentence and, perhaps, to a lack of desire to enforce it, it has been wholly innocuous.

Another current illustration is suggested by a recent publicity story to the effect that a bill has been introduced in Congress to curb branch banking and, while I by no means wish to take advantage of your kindness in having me appear to bring in any political discussion, it nevertheless serves as a capital instance of what must be looked for in the drafting of laws. The author of the bill was the Junior Senator from California but an examination of the bill shows, in the first place, that it permitted branch banking and, in the second place, what was advertised as a limitation of holdings in banks was wholly ineffective. The bill said in one paragraph that it was against the law for a corporation to own stock in excess of 10 per cent in any bank, but later on the bill defined the word "stock" to be "preferred stock" without any restriction as to common, or voting stock through which effective control is obtained. . . .

To obtain fair trade practices we must have enforcement. A Fair Trades Act must not be regarded simply as something to put the people on record for righteousness, like a New Year's resolution, to be forgotten as soon as taken. Too often people think they are FREE just because everybody is **talking** about LIBERTY. Too often we do not THINK at all. We simply "think what we think someone thinks we are thinking."

The next element for accomplishment of the purpose of a law is the quality and character of our officials. They must have a true desire to make a law work—to enforce it. . . .

Not only must we have the law and enforcement of the law but we must have adequate APPROPRIATIONS for the enforcement of the law. A favorite trick of special interests is to permit a law to be passed which the people DESIRE to have enforced; have enforcement machinery set up and then, in the holy name of ECONOMY, persuade the very people who sponsored the law to approve its nullification by reason of an inadequate appropriation for its enforcement.

So we must face all of these FACTS with our eyes open. "Facts are stubborn things" as Nicolai Lenin was reluctantly forced to admit when he found certain laws he DESIRED were against certain laws of human nature and human conduct. The fairy tale of Communism was one thing but his original doctrines must be forced to tread the thornier but more passable path of private initiative and reward according to ability and merit.

Facts ARE stubborn things, but it is true that civilization saves its soul, not by praying with its eyes shut, for rescue by some fairy prince; but by the way it wins its daily bread. That is a hard fact but it must

*Part of a speech delivered January 20 at the Biltmore Hotel, Los Angeles, before the Thirty-fourth Annual Convention of the California Council of Painting and Decorating Contractors of America.

be faced. If I would be an honest political advisor I must say to you as Blind Tom Gore, former Oklahoma Senator, once said:

"There are some who forget," he said, "that in all the tides of time no hypocrite ever burned at the stake. Men in public office are sometimes obliged to choose between their office and their conscience, between their safety and their conviction, between their honors and their honor."

And so, if we desire fair trade practices for ourselves we must perforce desire it for the other fellow. That is not a counsel of self-sacrifice but one of self-preservation. If you, as business men, would prosper, you must live in a prosperous community. . . .

Fair trade practice demands that the buying public be able to avail itself of your services at a cost that is profitable to you. You can not confine yourselves to dealing with the 513 rich people who, in 1929, received as much income as was received by 8,000,000 of the poor. You can not even be secure in serving the 28,860 rich people who received an income as great as that received by 19,000,000 poor people. Most of your customers should be the 19,000,000 people who have not enough income today to employ painting and decorating contractors. Today those 19,000,000 contribute to your well-being only to the extent that they pay their money for food and shelter to people who may give you secondary employment. It takes the income of ten, twenty or one hundred poor people to provide someone the wherewithal to employ you. . . .

Fair trade practices and monopolies are under vigorous discussion in Washington today. There is a big field for legislative action in which to attack unfair practices. There are evasions of the tax laws and many definitely known unfair practices and abuses which can be curbed by legislation.

We do need a constant policy of enforcement of our trade and monopoly laws. We must find means to protect competition without giving our blessing to the chiseler. Business must decide what it really wants.

Walter Lippman, conservative news commentator, said last April that "the restoration of competition is the only possible alternative to socialism and it would be useless, as well as hypocritical, for any to object to the collectivism of the New Deal and yet to cry out that an unmistakable economic monopoly should be tolerated by law.

In destroying the small business man, unfair business is destroying its own staunchest defender.

May I recommend to your practical consideration the present demand for low cost housing, and to the fact that unless an immediate special session of the legislature is called so as to pass the appropriate laws, California will lose $50,000,000 now appropriated under the Wagner Housing Act. That money, released in the State of California in the construction and related and dependent industries, would go a long way toward bringing [illegible] the present recession generally and particularly in your line of business.

To avoid some of the real estate racketeers and chiselers who might want to divert that money you should make it your business to see that consideration is given to the spending of the money in housing on lots already owned by the state on account of foreclosures for taxes, of which there are approximately 100,000 in Los Angeles County alone.

I have talked on the practical aspects of fair trade practices but let us remember that the basis of them all is found in a rule not written upon the statute books but which, to be effective, must be graven in your hearts and minds:—

"Do unto others as you would have others do unto you."

PRE-FABRICATED HOMES AID COMMUNITY DEVELOPMENT

THE Farm Security Administration, Washington, D. C., announces start of construction of ten inexpensive, pre-fabricated homes at Greenbelt, Maryland, by Parkbelt Homes, Inc., a private limited-dividend housing corporation.

This firm has leased approximately three acres within the community's residential area at an annual rental of $150 per acre, and may be permitted to lease up to 43 acres of additional land if it is agreed that more homes should be built at a later date. The rentals will help amortize the Government's investment in the suburban town, which was undertaken to provide employment and to demonstrate a new type of community planning.

The lease is the first step toward the expansion of Greenbelt by the private building industry. Although the Farm Security Administration now is completing only 885 dwelling units in the town, it has provided roads, utilities, and community buildings to accommodate an ultimate growth to approximately 3,000 homes.

The houses being erected by Parkbelt Homes, Inc., constitute one of the largest pre-fabrication developments ever undertaken on a commercial basis. They are one-story, steel-framed dwellings, with exterior walls of asbestos cement board and interior walls of plywood paneling. Each has a living room, dining room, kitchen, two bedrooms, bath room and utility room.

The development is being financed by a loan obtained by Parkbelt Homes, Inc., from the RFC Mortgage Company; the mortgage is insured by the Federal Housing Administration.

The Farm Security Administration's agreement with Parkbelt Homes, Inc., includes the following provisions:

1. The lease is for a period of 99 years; the title to the land remains with the Government.

2. In addition to the land rental, the corporation will assume its fair share of taxes, or sums in lieu of taxes paid to the state and local governmental agencies.

BUILD WELL~

A PROPERLY designed and well constructed building is a credit to any city and a profitable investment for its owner.

Such structures are the STANDARD OIL BUILDING, MATSON BUILDING, FOUR-FIFTY SUTTER STREET, STOCK EXCHANGE, S. F. BASE BALL PARK, MILLS TOWER, OPERA HOUSE and VETERANS' MEMORIAL, San Francisco, OLYMPIC CLUB ALTERATIONS, SANTA ANITA RACING PLANT and other notable structures — all built or supervised by —

Lindgren & Swinerton, Inc.

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We Maintain a Termite Control Department

Locate and Repair Diesel Engine Troubles Quickly and Easily.

Use the new wall chart prepared by Victor W. Pagé, M.S.A.E., the well known automotive engineer, SYSTEMATIC LOCATION OF DIESEL ENGINE TROUBLES.

Shows construction and all parts of typical engine and full system. Outlines all troubles causing lost power, misfiring, hard starting, noisy operation, smoking, etc. IDEAL FOR CLASSROOMS, WORKSHOPS AND GARAGES. A GUIDE TO LOGICAL TROUBLE SHOOTING.

Size 25" x 38". PRICE 50 cents.

Prepaid to any address—Special price on quantities

NORMAN W. HENLEY PUB. CO.
2 West 45th St., New York, or
THE ARCHITECT AND ENGINEER
68 Post Street, San Francisco

3. Community utility services, except heat, are available to the residents in the Parkbelt homes at the same rates paid by other residents of Greenbelt.

4. All buildings and improvements must conform to the town plan and be approved by the Government.

5. The corporation agrees to maintain the property and all improvements in good repair and to comply with all ordinances of public authorities applicable to the property.

6. Rentals will be restricted to a maximum of $10 a room.

It is expected that the ten homes will be completed and ready for occupancy this month. Although government-built homes at Greenbelt are rented, in general, only to families with annual incomes of between $1,000 and $2,000, there will be no income restriction on occupants of the Parkbelt dwellings.

Arthur Fisher, President of Parkbelt Homes, Inc., estimated the total cost of each house at approximately $6,000, divided as follows:

Direct construction cost $4,100; utilities and improvement of land $1,000; range, refrigerator, and other special equipment $500; interest, carrying charges, miscellaneous mortgage expense, planning, and inspection $400.

All dwellings being built by the Government in the three Greenbelt communities are scheduled for completion by June 30, 1938. Greenhills, where the Farm Security Administration is building 676 homes, is designed for an expansion to 2,000 units; Greendale, where 572 homes are under construction, can be expanded to 750 units. The distinctive feature of each of the communities is a surrounding "greenbelt" of forest, recreation, and farm land, intended to protect the towns from undesirable encroachments.

Further information on the Parkbelt Homes may be obtained from Arthur Fisher, 707 Munsey Building, Washington, D. C.

WILL ENCOURAGE HOME LOANS

Builders and related industries are urged by L. M. Giannini, president of Bank of America, to give special study to the reinstatement of Title I in the amended National Housing Act. Mr. Giannini says:

"Home owners with a substantial investment in a house several years old should be encouraged to go in for modernization. This is important from many points of view. Rehabilitation preserves and improves property values, maintains the tone of residential districts, and helps the promotion of new construction in those same areas.

"From the viewpoint of contractors an immediate campaign to stimulate rehabilitation will provide opportunity to organize crews from the best available men and get them working. Most modernization work can be done under winter and early spring weather conditions that ordinarily delay new construction.

"Bank of America's record of assistance to the home building industry is outstanding. The institution has

loaned more than $55,000,000 in California, the largest volume of any single bank in the Nation. At the same time, modernization has been emphasized, and during the life of the original Title I, Bank of America made rehabilitation loans totalling $57,000,000, spread over 105,000.

"It is our purpose, under the amended act, to again lend vigorous aid to the building industry. An advertising campaign, designed to reach actual and potential home owners, is already under way in the areas served by our 491 branches. With cooperation by builders, industry and finance, California and the entire country should soon experience a home building and modernization revival of gratifying proportions.

DESIGN BY SEATTLE WOMAN WINS PRIZE

The hundred dollar prize-winning design in the recent nationwide competition sponsored by James H. Blauvelt, interior designer and treasurer of the American Institute of Decorators, for the nearest approach to a "Modern American" style of interior decoration was placed on exhibition February 8 at the Macbeth Galleries, 11 East 57th Street, New York City.

The problem that the American art student had to face was that of designing a room in a style essentially of the United States of today both in symbol and in quality, and of suiting a self-made man whose total annual income is fifteen thousand dollars. The cost of this room (exclusive of the piano and of any structural change) was not to exceed three thousand dollars.

The winning plan was designed by Miss Margery Elise Robinson of Seattle, Washington. The judges chose her plan primarily on the basis of its design and livability; also taken into consideration were treatment of proportion, color balance, mass, style, conversational groupings, and lighting arrangements.

ARCHITECTURAL REGISTRATION SHOWS GAINS

Thirty-nine states, in addition to the District of Columbia, Hawaii, Puerto Rico, and the Philippines, now have registration laws restricting the practice of architecture to architects of proved qualifications, according to a report by C. Julian Oberwarth of Frankfort, Ky., chairman of the Committee on Registration Laws of the American Institute of Architects.

The remaining nine states are considering similar restrictions, and the movement has spread to Japan, which, Mr. Oberwarth says, is studying American experience with a view to adopting protective measures after centuries of inaction.

Health and safety are important considerations in safeguarding the public from architects who are unfitted to meet the responsibilities of the architectural profession and from low standards of design and construction, Mr. Oberwarth says, in reviewing the long struggle to eliminate the unfit from architecture as from medicine, law, and other fields.

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Wiring information, plans, or consultation without cost or obligation.

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"Imagine that all buildings have disappeared, and you get some idea of the magnitude of the responsibilities resting upon the profession of architecture," Mr. Oberwarth continues. "Buildings form the bulk of man-made environment. Environment is the standard by which the mental, material, and spiritual achievements of our country are judged, and plays a leading role in shaping the lives of present and future generations. It is imperative, therefore, that its creators be men of intelligence and vision, qualified by training and experience to make the most of available materials and building skill.

"Our people struggled through some 120 years of independent life before finding time to sidetrack political considerations sufficiently to observe that some masterpieces of building created by the patient skill of competent men had been surrounded by a more ghastly array of unsafe, unsanitary, and ugly structures than might have been created by malicious intent.

"The damage that could be done by uncontrolled practice was self-evident. Building technique had advanced to a point of being a highly complex undertaking. Careful study and scientific direction now had to be given not only to general design, but to problems of sanitation, safety, new construction, avoidance of fire and panic hazards, selections from new materials and equipment, economic planning, sound investment, heating, lighting, ventilation.

"Lawmakers suddenly awoke to the fact that here was a profession which exerted a stronger, more direct and more diversified influence upon public and private life than any other specialized service. The work of a single architect was often spreading to a dozen states. His buildings were occupied by thousands of people. Dangerous planning was a potential menace which might easily counteract the life's work of hundreds of physicians, whose profession had long since been restricted as a needed measure of public safety.

"Demand for control of the practice of architecture became persistent, and in 1897 the State of Illinois passed the first regulatory legislation in this country requiring that architects be examined and registered by a competent jury of their peers before being admitted to practice. Progress in other states was slow, but it was evident that the demand for action was not confined to particular sections or thickly populated parts of the country, but was, on the contrary, in the nature of a national awakening. The other seven states to pass similar laws prior to the year 1915 were California, New Jersey, Colorado, Louisiana, Utah, North Carolina and North Dakota, in the order given.

"Other states were closely observing the advantages achieved, and during the seven years from 1915 to 1921, inclusive, no less than sixteen additional states passed architectural registration laws in rapid succession. Even this figure would have been exceeded except for the interference of the World War.

"However, the registration column showed half the

states in the Union, and since that time the others have been falling in line at the rate of better than one each year. Two states adopted registration in 1937."

Other members of the Committee on Registration Laws of the American Institute of Architects have been named for 1938 as follows: Gerrit J. deGelleke, Milwaukee, Wis., vice-chairman; Edward B. Caldwell, Bridgeport, Conn.; Henry M. Favrot, New Orleans, La.; Louis J. Gill, San Diego, Cal.; Mellen C. Greeley Jacksonville, Fla.; Millard Burr Gulick, Boston; Gilbert C. Higby, Denville, N. J.; Miller I. Kast, Harrisburg, Pa.; Emil Lorch, Ann Arbor, Mich.; Olle J. Lorehn, Houston, Tex.; Harry L. Mead, Grand Rapids, Mich.; Charles F. Owsley, Youngstown, Ohio.

CHARLES W. STONE

Charles Waterman Stone, 63, consulting engineer of the General Electric Company, died at his home in Schenectady February 3 after an illness which confined him to bed for nine weeks. Death was caused by heart trouble.

Upon his graduation from the University of Kansas in 1894 Mr. Stone was with the Franklin Electric Company of Kansas City, the W. S. Hill Electric Company of New Bedford, Mass., and the Hancock Equipment Company of Boston two years each.

In 1900 he joined the General Electric organization in the drafting department, and in the following year was in switchgear engineering. Then he joined the lighting engineering department in 1904. Mr. Stone was named manager of the lighting department in 1912. He continued in that position until 1928 when, at his own request, he was relieved of managerial responsibilities and became a consulting engineer of the company.

Experimenting at home on new physical and mechanical problems had been one of Mr. Stone's chief hobbies since childhood, so it was natural that he took more than ordinary interest in many of the company's more important developments. Perhaps his chief interest was in radio and its associated developments, particularly the photophone, a device for recording the voice or music on film, the forerunner of the present day talking movie. He was also active in the affairs of the Radio Corporation of America from the time of its inception and in 1927, while still manager of the central station department, was named assistant to James G. Harbord, then president of R. C. A.

Seeing the possibilities of radio and other type vacuum tubes in other fields of the electrical industry, he became interested in recent years in the application of thyratron tubes as a cheaper and more efficient means in the distribution and conversion of electricity from alternating to direct current and vice versa.

COMPETITION FOR FEDERAL ART

A nationwide competition is planned for the selection of artists and designs of Federal building murals at the 1939 Golden Gate International Exposition.

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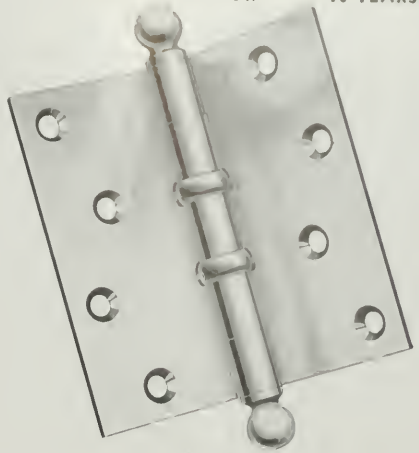

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BOOK REVIEWS

SYSTEMATIC LOCATION OF DIESEL ENGINE TROUBLES. A wall chart arranged by Victor W. Page, M.S.A.E. Published by Norman W. Henley Publishing Company, 2 West 45th Street, New York City. Size 25" x 38". Printed in two colors. Price 50c.

The increasing use of automotive Diesel engines and the numerous applications of small and medium powered engines operating on the compression ignition principle, to industrial uses as well as for transportation, makes this new chart a particularly timely publication. It is intended for shop, school and garage use and is a valuable guide to Diesel engine trouble shooting. The chart has sectional views, longitudinal and transverse, of a typical modern light Diesel engine as well as diagrams of a fuel supply system, including the feed pump, the injection pump and the fuel injector. The type is large, clear and easily read.

All mechanical parts are clearly indicated by arrows and named and the accompanying tabular matter summarizes the various defects apt to occur, the symptoms that indicate the defective condition and the remedy for the trouble. To make the search easy for the mechanic, the troubles are summarized under easily recognized faulty action such as lost power, hard starting, misfiring, noisy operation, reasons for different color exhaust smoke, etc. As the Diesel engine differs materially in operating principle from gasoline engines, such a chart should prove useful in all shops and garages catering to both types. It is also excellent for vocational and trade schools and the general mechanic.

MORE LIGHT—FREE

According to E. W. Beggs, Assistant Manager of the Commercial Engineering Department, Westinghouse Lamp Division, we obtain today five times as much light for our dollar as we did thirty years ago from the first tungsten filament lamps, and ten times as much as from the carbon lamps which they superseded.

This is because more efficient and cheaper lamps are available today and the price of electric power has dropped steadily and continuously year by year.

The cost of the light produced by a lamp is determined by three factors. The cost of the lamp and the cost of the current are, obviously, two of these, but the third, the efficiency of the lamp, is actually the most important of the three.

The enormous improvements in the efficiency of electric generating and transmitting equipment, within the past generation, is a familiar story—many of us can remember when electricity for lighting in the average home cost 10.5c per Kw. Hr. Today, the average householder pays only 4.6c per Kw. Hr.

Since 1907, the price of the typical Mazda lamp—the 60 watt, has fallen like a plummet from $1.75 to the present price of 15c. The increased efficiency of the

lamp, however, which determines how many lamps and fixtures and how much current is required for a given lighting job and therefore affects lighting costs more directly and extensively than the other factors, has risen step by step, year by year, until now the modern 60 watt Mazda lamp is about twice as efficient as it was when first introduced and almost three and one-half times as efficient as the carbon lamp of 1906.

ART TREASURES FOR FAIR

Art treasures of the world will be assembled on Treasure Island, site of the 1939 Golden Gate International Exposition, in one of the greatest exhibits of old masters and contemporary paintings.

Many Old World masterpieces never before shown in America have been promised for this outstanding exhibit. Not only are leading museums in Europe and the United States co-operating in sending to San Francisco some of their finest works, but private collectors both at home and abroad are contributing to this $20,000,000 showing.

In addition to the old master and contemporary art galleries and Pacific Basin exhibit, a decorative arts exhibit of superb examples of pottery, glass, china and fabrics, particularly from the Orient and the South and Central American countries bordering the Pacific, will be shown.

The exhibit of paintings will be held in the Palace of Fine Arts, one of the three large permanent buildings erected for the Exposition on Treasure Island.

ETCHING SOLUTIONS AND PASTE

Glass frosting materials for application to every kind of glassware have been developed by the Westinghouse Electric & Manufacturing Company. These four materials are the results of many years of research for the exacting duties of frosting lamp bulbs.

A glass etch solution has been formulated which will produce permanent white markings on glass. Being very fluid, it can be applied with a rubber stamp. It will dry rapidly with a small amount of heat.

A metal etch solution is for application by rubber stamp to brass, copper and silver. It produces a permanent and pleasing black finish, drying rapidly in the air without heat.

Acid glass frosting solution is an etching material in paste form. It produces a fine grained white satin frost on any type of glass in 10 to 15 seconds. It is unique in the soft quality of the surface which it produces.

Normally designs are applied to glass by coating the surface with paraffin or lacquer and cleaning off the portion which is to be etched.

COLUMBARIUM AND MAUSOLEUM

New bids have been taken by H. A. Minton, 525 Market Street, San Francisco, for a one-story reinforced concrete columbarium and mausoleum for the First Hebrew Congregation in the Home of Eternity Cemetery, Oakland. Estimated cost is $60,000.

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Sloane-Blabon Corporation is once more to the front with a convincing demonstration for bringing into reality difficult and unique decorative schemes proposed by the discriminating architect.

Chosen for its proven long wearing and highly decorative qualities, Starks & Flanders selected **SLOANE-BLABON Jaspe linoleum** to surface 55,000 square feet of floor space in the McClatchy High School. Then, to complete the rich, distinctive wall and ceiling treatment of the main lobby, illustrated above, they specified an elaborate reproduction of the plot plan of the school buildings, made up of varied colors of plain linoleum, to be inset in the main lobby floor.

Drawing upon the wide range of feature colors available in their line, SLOANE-BLABON'S Contract Department submitted a detailed miniature inset to satisfy the architects' demand for complete color harmony, and with skilled precision the linoleum contractors, H. W. Rivett Co., made the installation.

Here is another reason why architects and builders everywhere, to create that elusive "different" effect so important in modern decoration, specify Sloane-Blabon Linoleum.

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PRE-FABRICATED DWELLINGS IN SWEDEN

Villas and private dwellings have always been built of timber in Sweden, a fact that may be attributed to the wealth of timber at the disposal of builders and their experience gained in the course of centuries by the artisans.

The oldest type was a kind of log-cabin, the drawback to which was the waste of material and the gaps in the joints. The development of modern sawmilling caused this type to disappear almost completely and new methods were introduced, in which planks and boards were employed and cut to size on the site.

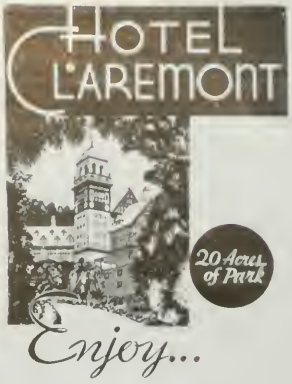
Originally every item of the joinery work was carried out by hand on the spot, but then arose the window and door frame industry that supplied ready-made frames produced at a factory. The advantages of machine production are obvious, uniformity in dimensions, quality of work and cheapness rendering the old hand-made article superfluous.

The next stage was the production at a factory of walls, roof trusses, doors, cupboards and staircases ready for erection. A system of units was evolved and speedy construction was greatly facilitated; 1920 saw the complete success of this system, and since then progress has not hesitated, the latest being the production of factory-made units from which complete houses may be erected.

The great aim of the new method is to effect economies in constructional costs and thus improve the standard of housing for the poorer classes; another advantage is the reduction of waste and a fuller utilization of raw timber. The wholesale purchase of raw material by the factories enables them to obtain a much lower price than is possible for smaller individual builders. A great economy of labor is also effected, with another factor, namely the use of less skilled labor at the machines than would be requisite for hand work.

From the builders' point of view there are further advantages, viz.:

1. The material is not subject to the influence of the weather during erection.



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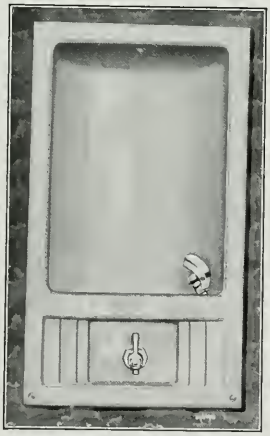

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The time required to erect a house of the type under discussion, consisting of three rooms and a kitchen, was established by a series of observations carried out in August 1932. The footings were laid at 8 a.m. and by 6 p.m. the house was so far advanced that the smoke of the first fire was already ascending from the chimney. There remained but the painting and a few finishings touches. Tar paper and tiles formed the roofing materials and all the panes were set in the window frames. The chimney was a ready-for-erection type and had been bricked in, a kitchen range and central heating system installed.

Owing to its system of small dwellings, Stockholm has the greatest number of owner-tenants in all Sweden, and in their erection nothing but ready-made units were employed. The invitations for tenders specified that as far as possible the material had to be delivered ready for erection; even the window and door frames had to be in the walls, so that anybody could erect the house by his own labor. This type of small dwelling is incomparably cheaper for the urban resident than the home in a block of flats that he would otherwise have to rent. In the country too, this type of house possesses manifold advantages, both financially and socially.

On the occasion of his visit of inspection, the then Prince of Wales stated he esteemed it a valuable opportunity to be able to see for himself the Swedish system of housing. He said the difference existing between the new houses and the ordinary town flats for working people was astonish-

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ing, and the question why every w[illegible] man did not take such a house inevitably arose to the observer's mind.

According to approximate calculations, the various types of pre fabricated houses erected in the course of the last ten years amount to 20,000, i.e., accommodation for 25,000 persons; the value of these houses is at least a hundred million kronen (say six million pounds sterling). The housing scheme in Stockholm has been visited by thousands of foreign observers, for they are unique of their kind and have furnished a model for many schemes since started abroad. It is really in the interest of the whole nation that such healthy dwellings should be encouraged.—Building.

CELOTEX STARTS ENGLISH PLANT

Another addition to the growing list of Celotex plants, Celotex Limited, is nearing completion and will begin operations next month. The logical outgrowth of a large and steadily increasing business in the British Isles and colonies, this plant is being built at a cost of approximately $1,250,000.

Located in Stonebridge Park section of London, at the crossing of the Grand Junction Canal and North Circular Road, the plant is also adjacent to the London, Midland, and Scottish railroad. These facilities provide excellent transportation by water to all parts of the world, and by rail, truck, and water to all portions of the British Isles.

The plant properties provide a large storage area for raw materials, which are unloaded from barges and placed in storage piles in a single operation with a longarm walking crane. The cane fiber will enter the plant at one end, progress through the washing, mixing, Ferox processing, and board forming machines to the drying ovens, and finally to the fabricating and warehouse spaces. Celotex hardboard products follow an equally simple progressive, manufacturing process, finishing at the warehouse space.

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be landed from barges at a point on the bank opposite the power house. At the end of the property nearest the highspeed highway is located the administration building.

$15,000 PRIZE CONTEST

Plans for a nation-wide $15,000 prize "Better Homes for a Better America" contest to be sponsored by Johns-Manville during the months of April, May, June and July, have been announced by H. M. Shackelford, Vice President of the J-M Sales Corporation in charge of sales promotion.

In addition to the national contest, detailed plans have been worked out which will enable building materials dealers in all parts of the country to tie in with their own local "Better Homes" contests, thus making contestants eligible for both local and national prizes.

F. H. A. ANALYSIS

Paraffine Companies, Inc., have released the following information pertaining to the new F. H. A. Law:

"Homes may now be built and financed on the most liberal terms ever available, and paid for out of income in monthly, rent-like installments, under the new amendments to the Federal Housing Administration insured mortgage system. Not only does the new plan permit insurance of mortgages covering as much as 90 per cent of the value of house and lot, but it materially reduces the cost of financing. Hereafter the total maximum annual carrying charge for an FHA insured mortgage on which a commitment is issued will be five and one-half per cent.

"This will include five per cent interest and one-half per cent mutual mortgage insurance premium. In the case of newly constructed homes securing mortgages not exceeding $5400, and meeting certain other conditions, the mortgage insurance premium rate will be one-fourth of one per cent, making the total annual carrying charge to the borrower five and one-quarter per cent.

"The insurance premium in the future will be based upon the outstanding balance, instead of the original

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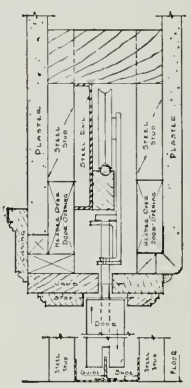

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face value of the mortgage as provided in the old law.

"The annual service charge of one-half of one per cent, which lending institutions have been permitted to charge under FHA regulations, will be discontinued on all mortgages for which commitments are issued in the future.

"Elimination of the annual service charge and the reduced cost of the mortgage insurance will represent a maximum saving of approximately one per cent per annum to home builders and buyers on newly constructed houses carrying mortgages of $5400 or less. On all other insurable mortgages the annual saving will be approximately three-quarters of one per cent.

"On newly constructed homes appraised at $6000 or less, the minimum permissible down payment or equity requirement will be reduced from 20 per cent to 10 per cent. Thus, on a $6000 newly constructed house, or an acceptable house built since January 1, 1937 but neither sold nor occupied since completion, the minimum down payment would be $600 and the maximum insurable mortgage would be $5400, representing 90 per cent of the appraised value.

"On newly constructed houses appraised at $10,000 or less, the insurable limit will be 90 per cent of the appraised value up to $6000 plus 80 per cent of the appraised value above that amount. For example, on a newly constructed $10,000 house the minimum down payment would be $1400 and the insurable mortgage limit would be $8600. On all other homes housing from one to four families, the insurable mortgage limit will remain at 80 per cent of the appraised value, but not in excess of $16,000."

* * *

"The following is a condensed interpretation of certain paragraphs from the Amendments to the National Housing Act dated February 3, 1938."

Para. 203 (b)

LOANS 80%—20 Yrs.—5%

2A. This section is one the same basis upon which FHA has been operating in the past, viz., not to exceed $16,000, not to exceed four families; New and existing construction.

Changes:

(1) No service charge allowed.

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(2) ½ of 1% annual mortgage insurance premium on declining balances.

LOANS 90%—25 Yrs.—5%

28. Not to exceed $5400 and not to exceed 90% of the appraised value as of the date the Mortgage is accepted for Insurance. Includes urban, suburban and rural, i.e., farm houses are eligible under this paragraph.

The following properties may qualify:

(1) New Construction begun after Feb. 3, 1938 and which is approved by FHA prior to construction.

(2) The construction of which was begun after Jan. 1, 1937 and before Feb. 3, 1938. If houses built within this subparagraph are either lived in or sold they are ineligible.

(3) Homes built and insured under this Para., 28 must be owner occupied at the time of insurance and shall have paid on account of the property at least 10% of the appraised value in cash or its equivalent.

(a) No service charge allowed.

(b) ¼ of 1% annual insurance premium on declining balances.

NOTE—The amount of the mortgage governs 90% loans, not the appraised value. For example: Property valued at $10,000 would be eligible for a loan of $5400, or less, which would therefore carry ¼ of 1% annual Premium on declining balances.

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LOANS 90%-80%—20 Years—5%

2C. Not exceed $8600 or the sum of
90% of $6,000 or $5,400
80% of $4,000 or $3,200

$8,600

Same property limitations and conditions apply here as to the property eligible under Para. 2B above.

(a) No service charge allowed.

(b) ½ of 1% annual mortgage insurance premium on declining balances.

Para. 203 (a)

GENERAL

On and after July 1, 1939 the following Mortgages shall be accepted for Insurance.

(1) Applications that cover property which is approved prior to the completion of such property.

(2) Applications that cover property the construction of which was commenced after Jan. 1, 1937 and was completed prior to July 1, 1939.

(3) Applications which cover property that has been previously insured, i.e., substitutions of Mortgagor, and/or increase or decrease in the amount of a New Mortgage.

In effect, as the act now stands, after July 1, 1939, we will not insure refinanced or purchase money mortgages except as explained in sub-para. 3 immediately above.

NOTES AND COMMENTS

[Continued from Page 10]

New London school explosion. The report of his investigation was published as Senate Document No. 56.

Since the Texas schoolhouse disaster, the Bureau of Chemistry and Soils has made a special study of more than 1,200 fires. Special attention was given to rural school fires. This survey showed that the annual fire loss on school and college property in the United States is more than $5,000,000 and that approximately 800 people have been killed and several hundred injured in these schoolhouse disasters.

* * *

Air conditioning equipment as it is manufactured today is a direct and important factor in the conserving of water and the avoidance of undue strain on water disposal facilities in cities throughout the country, air conditioning experts assert.

Revealing that cooling towers and evaporative condensers now available for all types of air conditioning installations cut water use 90 to 95 per cent, it is declared that the industry everywhere is observing a program of cooperation with municipal authorities and utilities officials, planned to supply equipment best suited to the needs of the users and the requirements of the communities.

Chicago, second largest city in the country, actually has no residential water meters. Population, business and industrial growth have continued for years in many cities with no action to expand or to safeguard the volume of water supply.

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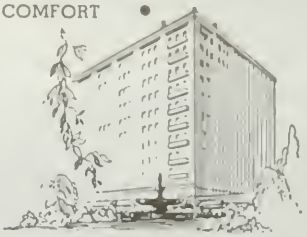

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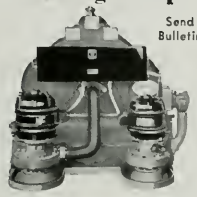

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**A resolution passed by the State Association of California Architects at its Tenth Annual Convention, October, 1937*

State Association of California Architects, Northern Section, and "The Architect & Engineer" having proven to be a very satisfactory one, by which the Association has become in many respects a working partner with this publication, therefore

BE IT RESOLVED: That an even wider co-operation and a fuller endorsement of the publication and its services, including Architects Reports, should be undertaken by the Association, realizing that "The Architect and Engineer" is the binding link between the architectural profession and the building industry in this Pacific Coast territory, reflecting the best advances of both, and

BE IT FURTHER RESOLVED: That the aim of the Association during this coming year, with reference to this publication, be to assist in promoting the legitimate interest of this publication, which is contributing materially to the advancement of the Association and its membership.

We deeply appreciate this endorsement by the Architectural Profession. Producers interested in publicizing their building products in this important field please note.

★

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CABOT'S QUILT—Gunn, Carle & Co., 20 Potrero Avenue, San Francisco.
VAPORSEAL, Mfg. by Celotex Corp., 919 N. Michigan Avenue, Chicago.
FIRTEX of Northern California, 461 Market Street, San Francisco.
*GEORGE D. KARSCH, Builders Exchange, Sacramento, California.

INSURANCE

*FIREMAN'S FUND Insurance Company, 401 California Street, San Francisco.

KITCHEN EQUIPMENT

*MANGRUM, HOLBROOK & ELKUS, 301 Golden Gate Avenue, San Francisco.

LACQUERS

W. P. FULLER & Co., 301 Mission Street, San Francisco. Branches and dealers throughout the West.

LIGHTING FIXTURES

*W. W. WARREN Company, 955 Mission Street, San Francisco.
*INCANDESCENT SUPPLY Company, 726 Mission Street, San Francisco.
*PHOENIX-DAY Company, 729 Mission Street, San Francisco.

LIMESTONE

*INDIANA LIMESTONE Company, 130 Lunado Way, San Fnacisco.

LINOLEUM, CARPETS, Etc.

*WEST COAST LINOLEUM & CARPET Co., 1163 Market Street.
*VAN FLEET-FREEAR Company, 557 Howard Street, San Francisco.
TURNER RESILIENT FLOORS, Inc., 141 New Montgomery Street, San Francisco.
*D. N. & E. WALTER & Company, 562 Mission Street, San Francisco.
*CONGOLEUM-NAIRN, Inc., 180 New Montgomery Street, San Francisco.
*K. M. BURCK, 505 B Street, San Mateo.
*HIGGINS Co., 2335 Broadway, Oakland.

LOCKERS—METAL

*TRASK & SQUIER, 39 Natoma Street, San Francisco.

LUMBER

PACIFIC MFG. Co., 454 Montgomery Street, San Francisco; 1315 Seventh Street Oakland; Los Angeles and Santa Clara.
SMITH LUMBER Company, Nineteenth Avenue and Estuary, Oakland.
MELROSE LUMBER & SUPPLY Co., Forty-sixth Avenue and E. Twelfth Street, Oakland.
E. K. WOOD LUMBER Company, 470! Santa Fe Avenue, Los Angeles; 1 Drumm Street, San Francisco; Frederick and King Streets, Oakland.
*SANTA FE LUMBER Company, 16 California Street, San Francisco.
*SUNSET LUMBER Company, 400 High Street, Oakland.
FRIEND & TERRY LUMBER Co., Front & S Streets, Sacramento.
*OAKLAND LUMBER Co., 6901 E. 14th Street, Oakland.

MACHINERY—PUMPS, Etc.

SIMONDS MACHINERY Company, 816 Folsom Street, San Francisco.

MARBLE

JOSEPH MUSTO SONS-KEENAN Co., 535 N. Point Street, San Francisco.

MILLWORK

E. K. WOOD LUMBER Company, No. 1 Drumm Street, San Francisco, Oakland. Los Angeles.
LANNOM BROS. Mfg. Co., Fifth and Magnolia Streets, Oakland.
MELROSE LUMBER & SUPPLY Company, Forty-sixth Avenue and E. Twelfth Street, Oakland.
PACIFIC MFG. Co., 454 Montgomery Street, San Francisco; 1315 Seventh Street, Oakland; Los Angeles and Santa Clara.
SMITH LUMBER Company, Nineteenth Avenue and Estuary, Oakland.
*WESTERN DOOR and SASH Company, 5th and Cypress Streets, Oakland.
*OAKLAND PLANING MILL, 105 Washington Street, Oakland.
*T. P. HOGAN Company, 2d and Alice Streets, Oakland; 630 Mission Street, San Francisco.
*SAN MATEO PLANING MILL, San Mateo.

MONEL METAL

"INCO" BRAND, distributed on the Pacific Coast by the Pacific Metals Company 3100-19th Street, San Francisco, and 1400 So. Alameda Street, Los Angeles.
*WHITEHEAD METAL APPLIANCE CO., 4238 Broadway, Oakland.

NURSERY STOCK

*C. J. BURR, 305 Lytton Avenue, Palo Alto.
*CALIFORNIA NURSERIES, Niles.

OIL BURNERS

*SAN MATEO FEED and FUEL Company, San Mateo, Cal.
S. T. JOHNSON Co., 585 Potrero Avenue, San Francisco; 940 Arlington Street, Oakland; 1729 Front Street, Sacramento, and 1020 El Camino Real, San Carlos, Calif.
VAUGHN-G. E. WITT Co., 4224-28 Hollis Street, Emeryville, Oakland.
*HORABIN OIL & BURNER Company, 234 Hamilton Avenue, Palo Alto.
PAN-AMERICAN SIMPLEX OIL BURNER, 820 Parker Street, Berkeley.

ONYX

JOSEPH MUSTO SONS-KEENAN Co., 535 No. Point Street, San Francisco.

ORNAMENTAL IRON

INDEPENDENT IRON WORKS, 821 Pine Street, Oakland.

PAINTING, DECORATING, Etc.

THE TORMEY Co., 563 Fulton Street, San Francisco.
*RAPHAEL Company, 270 Tehama Street, San Francisco.

PAINTS, OIL, LEAD

W. P. FULLER & CO., 301 Mission Street, San Francisco. Branches and dealers throughout the West.
FRANK W. DUNNE Co., 41st and Linden Streets, Oakland.
GENERAL PAINT Corp., San Francsico, Los Angeles, Oakland, Portland, Seattle and Tulsa.
NATIONAL LEAD Company, 2240-24th Street, San Francisco. Branch dealers in principal Coast cities.
*SHERWIN-WILLIAMS Company, 1415 Sherwin Avenue, Oakland.

PARTITIONS—MOVABLE OFFICE

PACIFIC MFG. Co., 454 Montgomery Street, San Francisco; 1315 Seventh Street, Oakland; factory at Santa Clara.

PLASTER

"EMPIRE" and "RENO HARDWARE PLASTER," manufactured by Pacific Portland Cement Co., 111 Sutter Street, San Francisco; Portland, Los Angeles and San Diego.

PLASTERING CONTRACTOR

*JAMES F. SMITH, 271 Minna Street, San Francisco.

ARCHITECTS' AND ENGINEERS' SPECIFICATION INDEX

Classified Directory of Building Material Manufacturers, Dealers and Contractors

*Denotes subscriber of ARCHITECTS' REPORTS, sponsored and endorsed by State Association of California Architects, and published daily by THE ARCHITECT AND ENGINEER.

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CALACOUSTIC, Sound Absorbing Plaster, manufactured by Pacific Portland Cement Co., 111 Sutter Street, San Francisco. Los Angeles and San Diego.

PLASTER MATERIALS

*U. S. GYPSUM Company, Architect's Building, Los Angeles.

PLATE GLASS

LIBBEY-OWENS-FORD GLASS Co., Toledo, Ohio; 633 Rialto Building, San Francisco; 1212 Architect's Building, Los Angeles; Mr. C. W. Holland, P.O. Box 3142, Seattle.

PLUMBING CONTRACTORS

CARL T. DOELL, 467-21st Street, Oakland.
*SCOTT Company, 243 Minna Street, San Francisco.
*W. H. PICARD, 4166 Broadway, Oakland.

PLUMBING FIXTURES AND SUPPLIES

CRANE Co., all principal Coast cities.
TAY-HOLBROOK, Inc., San Francisco, Oakland, Sacramento, Fresno, San Jose.
*STANDARD SANITARY Manufacturing Company, 278 Post Street, San Francisco.
*WALWORTH CALIFORNIA Company, 665 Sixth Street, San Francisco.
*W. R. AMES Co., 150 Hooper Street, San Francisco.

PRESSURE REGULATORS

VAUGHN-G. E. WITT Co., 4224-28 Hollis Street, Emeryville, Oakland.

PUMPS

SIMONDS MACHINERY Company, 816 Folsom Street, San Francisco.

REFRIGERATION

KELVINATOR ELECTRIC REFRIGERATORS, Aladdin Heating Corp., 5107 Broadway, Oakland.

ROOFING CONTRACTORS

*MALLOTT & PETERSON, 2412 Harrison Street, San Francisco.
*MARSHALL SHINGLE Company, 608-16th Street, Oakland.

ROOFING INSULATION

*JOHNS-MANVILLE Sales Corp., 159 New Montgomery Street, San Francisco.

ROOF MATERIALS

*PIONEER FLINTKOTE Company, Shell Building, San Francisco.
*PARAFFINE Company, Inc., 475 Brannan Street, San Francisco.
GLADDING McBEAN & Co., 9th and Harrison Streets, San Francisco; 2901 Los Feliz Boulevard, Los Angeles; 1500 First Avenue South, Seattle; 79 S.E. Taylor Street, Portland; 22nd and Market Street, Oakland; 1102 N. Monroe Street, Spokane· Vancouver, B.C.
N. CLARK & SONS, 112-116 Natoma Street San Francisco; works, West Alameda.
*CERTAIN-TEED PRODUCTS Co., 315 Montgomery Street, San Francisco.

SAFES

HERRING-HALL-MARVIN SAFE Co., 214 California, Street, San Francisco.

SAND, ROCK AND GRAVEL

JOHN CASSARETTO, Sixth and Channel Streets, San Francisco.
BASALT ROCK Co., Napa.
*KAISER PAVING Company, Latham Square Building, Oakland.
MELROSE BUILDING MATERIAL Co., 4501 Tidewater Avenue, Oakland.

SCREENS

ROLL-AWAY WINDOW SCREEN Company, Eighth and Carlton Streets, Berkeley; 557 Market Street, San Francisco.

SEATING

*HEYWOOD-WAKEFIELD Co., 180 New Montgomery Street, San Francisco.
*GENERAL SEATING Corporation, 160 Second Street, San Francisco.

SHADE CLOTH

CALIFORNIA SHADE CLOTH Co., 210 Bayshore Boulevard, San Francisco.

SHINGLE STAINS

CABOT'S CREOSOTE STAINS, Gunn-Carle & Co., 20 Potrero Ave., San Francisco.

AUTO SPRINKLERS

GLOBE AUTOMATIC SPRINKLER Co. 665 6th Street, San Francisco.

STANDARD STEEL BUILDINGS

INDEPENDENT IRON WORKS, 821 Pine Street, Oakland.

STEEL FURNITURE

*GENERAL FIREPROOFING Company, 160 Second Street, San Francisco.

STEEL—REINFORCING

BETHLEHEM STEEL Company, 20th and Illinois Streets, San Francisco; E. Slauson Avenue, Los Angeles; American Bank Building, Portland, Ore.; W. Andover Street, Seattle, Wash.
*SOULE STEEL Company, Army Street, San Francisco and Los Angeles.
GUNN-CARLE Company, Portrero Avenue San Francisco.
CECO STEEL PRODUCTS Co., 1280 Indiana Street, San Francisco.
*W. C. HAUCK & Co., 280 San Bruno Avenue, San Francisco.
*TRUSCON STEEL Company, 604 Mission Street, San Francisco.

STEEL—STAINLESS

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JUDSON PACIFIC Company, C. F. Weber Building, Mission and Second Streets; San Francisco shops, San Francisco and Oakland.
HERRICK IRON WORKS, 18th and Campbell Streets, Oakland.
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*WESTERN IRON WORKS, 141 Beale Street, San Francisco.
COLUMBIA STEEL Company, Russ Building, San Francisco.

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MULLEN MFG. Co., 60 Rausch Street, San Francisco.

STORE FRONTS

KAWNEER MFG. Co., Eighth Street and Dwight Way, Berkeley.

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*CALIFORNIA STUCCO Company, 6th & Berry Streets, San Francisco.

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JOHNSON SERVICE Company, Milwaukee, represented on the Pacific Coast by the following branch offices: 814 Rialto Building, San Francisco; 153 West Avenue, 34, Los Angeles; 1312 N.W. Raleigh Street, Portland, and 473 Coleman Building, Seattle.

TELEPHONES—INTERCOMMUNICATING

*PACIFIC TELEPHONE and TELEGRAPH Company, 140 New Montgomery Street, San Francisco.

TERMITE CONTROL—WOOD PRESERVATIVE

E. K. WOOD LUMBER Co., [illegible] Drumm Street San Francisco; 470 Santa Fe Avenue, Los Angeles; [illegible] King Streets, Oakland.
J. H. BAXTER & Company, 311 Market Street San Francisco.

TILE—DECORATIVE, Etc.

*CAMBRIDGE TILE Mfg. Co., 1155 Harrison Street, San Francisco.
POMONA TILE MFG. Co., plant, Pomona, Cal.; Sales Rooms, 135 Tenth Street San Francsico; 217 S. La Brea Avenue Los Angeles; 6106 Roosevelt Way, Seattle.
GLADDING McBEAN & Co., 9th and Harrison Streets, San Francisco; 2901 Los Feliz Boulevard, Los Angeles
KRAFTILE Company, Niles California and 525 Market St., San Francisco.
*CALIFORNIA ART TILE Corp. Richmond Cal.

TILE CONTRACTORS

*CAMBRIDGE WHEATLEY Company, 1155 Harrison Street, San Francisco.

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DAVEY TREE SURGERY Co., Ltd., Russ Building, San Francisco; Story Building, Los Angeles.

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*SUMMERBELL TRUSS Company, 405 Builders Exchange Building, Oakland.
*ARCH-RIB TRUSS Company, 608 Sixteenth Street, Oakland.

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VENTILATING EQUIPMENT

*THE B. F. STURTEVANT Company, 759 Monadnock Building, San Francisco.

WALL BOARD

*WESTERN BUILDERS SUPPLY Company, 401 Fourth Street, San Francisco.

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*WATROLA Corporation, Ltd., 1170 Howard Street, San Francisco.
TAY-HOLBROOK, Inc., San Francisco, Oakland, Sacramento, Fresno, San Jose.
*PITTSBURG WATER HEATER Co., 898 Van Ness Avenue, San Francisco.
*RUUD HEATER Company, 437 Sutter Street, San Francisco.
WESIX ELECTRIC HEATER Company, 380 First Street, San Francisco.

WINDOW SASH AND FIXTURES

KAWNEER MFG. Company, Dwight Way and Eighth Street, Berkeley.
DALMO SALES Company Corporation, 511 Harrison Street, San Francisco.
*DETROIT STEEL PRODUCTS Co., 111 Sutter Street, San Francisco.

WINDOW SHADES

AEROSHADE Company represented by W. R. Knight, 557 Market Street San Francisco.
CALIFORNIA SHADE CLOTH Co., 210 Bayshore Boulevard, San Francisco.

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